JVC

SERVICE MANUAL

D-ILA PROJECTION TELEVISION

HD-56ZR7J, HD-56ZR7U, HD-70ZR7J, HD-70ZR7U

BASIC CHASSIS
RP4

HD-ILA Powered by D-ILA
DynaPiX Powered by D.I.S.T.
HD ready
HDMI HIGH-DEFINITION MULTIMEDIA INTERFACE
T-V LINK

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No.YA385
2006/3

SPECIFICATION

Items		Contents			
		HD-56ZR7J	HD-56ZR7U	HD-70ZR7J	HD-70ZR7U
Dimensions (W × H × D)		131.8 cm × 96.8 cm × 43.9 cm		162.6 cm × 116.7 cm × 51.9 cm	
Mass		42 kg		69 kg	
TV RF System		CCIR (I)	CCIR (B/G, I, D/K, L)	CCIR (I)	CCIR (B/G, I, D/K, L)
Colour System		PAL, NTSC 3.58/4.43 [EXT only]	PAL, SECAM, NTSC 3.58/4.43 [EXT only]	PAL, NTSC 3.58/4.43 [EXT only]	PAL, SECAM, NTSC 3.58/4.43 [EXT only]
Stereo System		NICAM (I)	NICAM (B/G, I, D/K, L), A2 (B/G, D/K)	NICAM (I)	NICAM (B/G, I, D/K, L), A2 (B/G, D/K)
Teletext System		FLOF (Fastext level 2.5), TOP, WST(World Standard system)			
Receiving Frequency		VHF: 47MHz - 470MHz (Except UK) UHF: 470MHz - 862MHz			
Intermediate Frequency	VIF	38.9MHz (I)	38.9MHz (B/G, I, D/K, L)	38.9MHz (I)	38.9MHz (B/G, I, D/K, L)
	SIF	32.9MHz (6.0MHz :I)	33.4MHz (5.5MHz :B/G) 32.9MHz (6.0MHz :I) 32.4MHz (6.5MHz :D/K)	32.9MHz (6.0MHz :I)	33.4MHz (5.5MHz :B/G) 32.9MHz (6.0MHz :I) 32.4MHz (6.5MHz :D/K)
Colour Sub Carrier Frequency	PAL	4.43MHz			
	SECAM	----	4.40625MHz / 4.25MHz	----	4.40625MHz / 4.25MHz
	NTSC	3.58MHz / 4.43MHz			
Power Input		AC220V - AC240 V, 50 Hz			
Power Consumption		179 W (Standby: 2.6 W)			
Projection Source		110W High-pressure mercury lamp			
Projection Device		D-ILA device (Reflection active matrix type LCD) x 3(R / G /B)			
Resolution		Total=H:1312 × V:800 [Effective =H:1280 × V:720]			
Screen		Transparent screen (unitized fresnel lens / lenticular lens), aspect ratio 16:9			
Screen Size		56" (142 cm) Measured diagonally H:124 cm × V:69.7 cm		70" (178 cm) Measured diagonally H:155.5 cm × V:87.2 cm	
Audio Power Output		10 W + 10 W			
Speaker		10 cm round type × 2			
Aerial terminal (VHF/UHF)		75 Ω unbalanced, coaxial			
EXT-1 / EXT-2 / EXT-3 (Input / Output)		21-pin Euro connector (SCART socket) × 3			
EXT-4 (Input)	Component Video 1125i / 750p 625p / 525p / 625i / 525i Audio	RCA pin jack × 3 Y : 1V (p-p) (Sync signal: ±0.35V(p-p), 3-value sync.), 75Ω Pb/Pr : ±0.35V(p-p), 75 Ω Y : 1V (p-p), Positive (Negative sync provided), 75 Ω Cb/Cr : 0.7V(p-p), 75 Ω 500mV(rms) (-4dBs), high impedance, RCA pin jack × 2			
EXT-5 (Input)	S-Video Video Audio	Mini-DIN 4-pin × 1 Y : 1V(p-p), positive, negative sync, 75Ω C : 0.286V(p-p) (burst signal), 75Ω 1V(p-p), positive, negative sync provided, 75Ω, RCA pin jack × 1 500mV(rms) (-4dBs), high impedance, RCA pin jack × 2			
Digital Input	Video Audio	HDMI 2-row 19pin connector × 1 (Digital-input terminal is not compatible with picture signals of personal computer) Digital: HDMI 2-row 19pin connector × 1 Analog: 500mV(rms) (-4dBs), high impedance, RCA pin jack × 2			
PC (RGB) Input		D-sub 3-row 15pin × 1 R/G/B : 0.7V (p-p), 75Ω HD / VD : 1V (p-p) to 5V (p-p), high impedance < Available signal > VGA : 640 pixels × 480 pixels (Horizontal : 31.5kHz / Vertical : 60Hz) XGA : 1024 pixels × 768 pixels (Horizontal : 48.4kHz / Vertical : 60Hz)			
Audio Out		0 to 1000mV(rms), low impedance, RCA pin jack × 2			
Headphone Jack		3.5mm Stereo mini jack × 1			
Remote Control Unit		RM-C1811H (AA/R6 / UM-3 battery × 2)			

Design & specifications are subject to change without notice.

SECTION 1
PRECAUTION

1.1 SAFETY PRECAUTIONS

(1) The design of this product contains special hardware, many circuits and components specially for safety purposes. For continued protection, no changes should be made to the original design unless authorized in writing by the manufacturer. Replacement parts must be identical to those used in the original circuits. Service should be performed by qualified personnel only.

(2) Alterations of the design or circuitry of the products should not be made. Any design alterations or additions will void the manufacturer's warranty and will further relieve the manufacturer of responsibility for personal injury or property damage resulting therefrom.

(3) Many electrical and mechanical parts in the products have special safety-related characteristics. These characteristics are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in the parts list of Service manual. **Electrical components having such features are identified by shading on the schematics and by (⚠) on the parts list in Service manual**. The use of a substitute replacement which does not have the same safety characteristics as the recommended replacement part shown in the parts list of Service manual may cause shock, fire, or other hazards.

(4) **Don't short between the LIVE side ground and ISOLATED (NEUTRAL) side ground or EARTH side ground when repairing.**
Some model's power circuit is partly different in the GND. The difference of the GND is shown by the LIVE : (⊥) side GND, the ISOLATED (NEUTRAL) : (⏚) side GND and EARTH : (⏚) side GND.
Don't short between the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND and never measure the LIVE side GND and ISOLATED (NEUTRAL) side GND or EARTH side GND at the same time with a measuring apparatus (oscilloscope etc.). If above note will not be kept, a fuse or any parts will be broken.

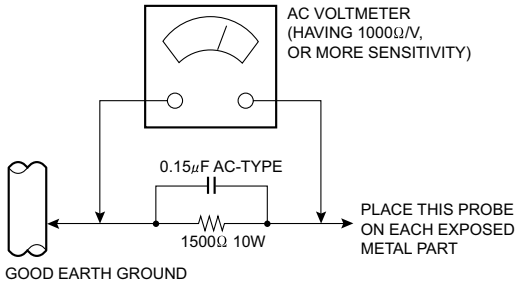
(5) When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuit area. Where a short circuit has occurred, those components that indicate evidence of overheating should be replaced. Always use the manufacturer's replacement components.

(6) **Isolation Check (Safety for Electrical Shock Hazard)**
After re-assembling the product, always perform an isolation check on the exposed metal parts of the cabinet (antenna terminals, video/audio input and output terminals, Control knobs, metal cabinet, screw heads, earphone jack, control shafts, etc.) to be sure the product is safe to operate without danger of electrical shock.

a) **Dielectric Strength Test**
The isolation between the AC primary circuit and all metal parts exposed to the user, particularly any exposed metal part having a return path to the chassis should withstand a voltage of 3000V AC (r.m.s.) for a period of one second. (. . . Withstand a voltage of 1100V AC (r.m.s.) to an appliance rated up to 120V, and 3000V AC (r.m.s.) to an appliance rated 200V or more, for a period of one second.)
This method of test requires a test equipment not generally found in the service trade.

b) **Leakage Current Check**
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Using a "Leakage Current Tester", measure the leakage current from each exposed metal part of the cabinet, particularly any exposed metal part having a return path to the chassis, to a known good earth ground (water pipe, etc.). Any leakage current must not exceed 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.2mA AC (r.m.s.).

Alternate Check Method
Plug the AC line cord directly into the AC outlet (do not use a line isolation transformer during this check.). Use an AC voltmeter having 1000Ω per volt or more sensitivity in the following manner. Connect a 1500Ω 10W resistor paralleled by a 0.15μF AC-type capacitor between an exposed metal part and a known good earth ground (water pipe, etc.). Measure the AC voltage across the resistor with the AC voltmeter. Move the resistor connection to each exposed metal part, particularly any exposed metal part having a return path to the chassis, and measure the AC voltage across the resistor. Now, reverse the plug in the AC outlet and repeat each measurement. Any voltage measured must not exceed 0.75V AC (r.m.s.). This corresponds to 0.5mA AC (r.m.s.).
However, in tropical area, this must not exceed 0.3V AC (r.m.s.). This corresponds to 0.2mA AC (r.m.s.).



1.2 INSTALLATION

1.2.1 HEAT DISSIPATION

If the heat dissipation vent behind this unit is blocked, cooling efficiency may deteriorate and temperature inside the unit will rise. The temperature sensor that protects the unit will be activated when internal temperature exceeds the predetermined level and power will be turned off automatically.
Therefore, please make sure pay attention not to block the heat dissipation vent as well as the ventilation outlet behind the unit and ensure that there is room for ventilation around it.
Do not put foreign objects near the ventilation holes as this can result in fire or electrical hazards.
Do not block the ventilation holes as this may cause the internal temperature to rise and possibly result fire.

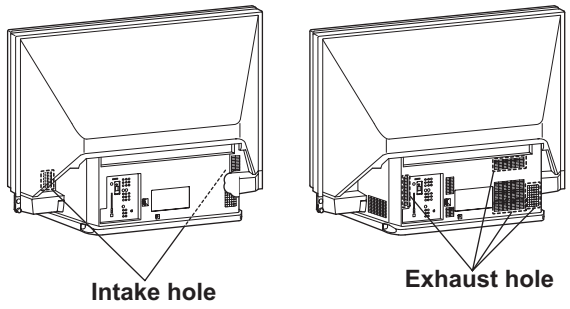


*Diagram differs from actual appearance.

1.2.2 INSTALLATION REQUIREMENTS

Ensure that the minimal distance is maintained, as specified fingure, between the unit with and the surrounding walls, as well as the floor etc.
Install the unit on stable flooring.
Take precautionary measures to prevent the unit from tipping in order to protect against accidents and earthquakes.

CAUTION FOR INSTALLATION

- Do not tilt the TV towards the left or right, or toward the back.
- Install the TV in a corner on the floor so as to keep cords out of the way.
- The TV will generate a slight amount of heat during operation. Ensure that sufficient space is available around the TV to allow satisfactory cooling.

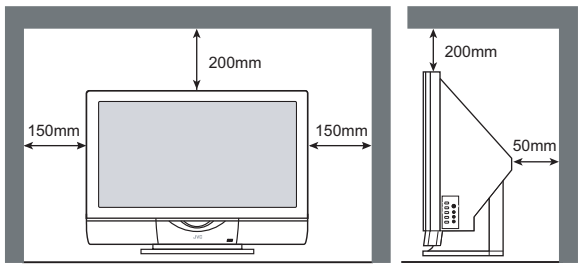
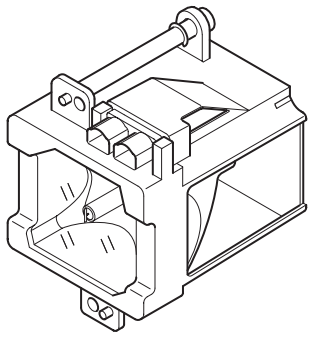


*Diagram differs from actual appearance.

1.3 LAMP UNIT HANDLING CAUTION

LAMP UNIT : TS-CL110EAA



1.3.1 PRECAUTION FOR LAMP UNIT

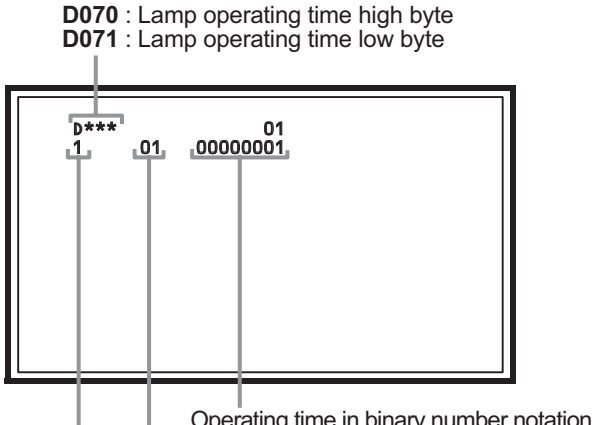
The lamp emits high intensity white, ultraviolet and infrared light. Do not look directly at the light during service.
Also, do not touch the lamp directly as it presents a burn hazard.
Handle with extra care. This lamp emits high heat and contains high-pressure during use.
Do not give any impact as this may cause the broken lamp.

1.3.2 HOW TO CONFIRM LAMP OPERATING TIME

- MAXIMUM COUNT TIME= **65535 hours**
  (1) Press the **[INFORMATION]** key and **[MUTING]** key simultaneously, then enter the SERVICE MODE.
  (2) When the Main Menu is displayed, press **[4]** key to enter the setting display for designing.
  (3) Press **[CH+]** / **[CH-]** key to select the addresses (items).

NOTE:

- Confirmation of the information can be done by selecting addresses (items) below.
  Display position is in the far right side in the 2nd row from the top, as displayed below.



< Calculation example >
D070 (decimal number notation) = 003
D071 (decimal number notation) = 232
→ (3 x 256) + 232 = 1000 hours

1.3.3 LAMP UNIT REPLACEMENT

(1) The lamp replacement message will appear when need to change the lamp. After replace the lamp, need to reset the timer which is built into TV.
(2) Life of the lamp unit is about **6500 hours** over. Lamp use time can be check at the lamp message MENU.
(3) If Fig.1 message appears when turn the TV on, need to replace the lamp.
(4) Use the lamp timer reset only after replacing the lamp.

NOTE:

- This message will appear every time turn on the TV, when the lamp needs to be replaced. Press the **[OK]** key to make the message disappear, or replace the lamp.

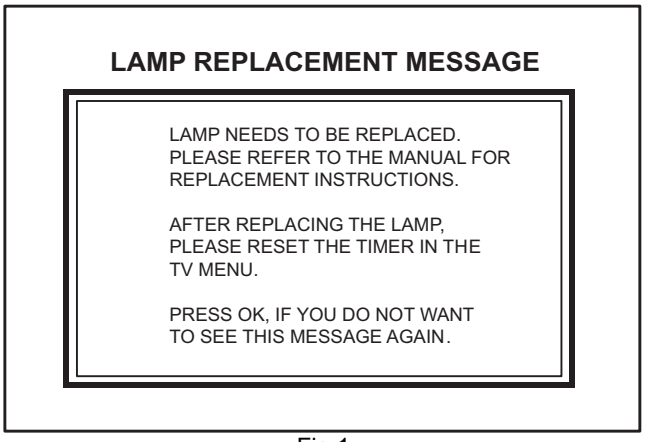

LAMP REPLACEMENT MESSAGE
LAMP NEEDS TO BE REPLACED.
PLEASE REFER TO THE MANUAL FOR
REPLACEMENT INSTRUCTIONS.
AFTER REPLACING THE LAMP,
PLEASE RESET THE TIMER IN THE
TV MENU.
PRESS OK, IF YOU DO NOT WANT
TO SEE THIS MESSAGE AGAIN.

Fig.1

1.3.4 HOW TO REPLACE THE LAMP UNIT

- Refer to the "**USERS GUIDE**" for a detailed operating description.

(1) Turn off the TV power.
(2) After the LAMP LED light has stopped blinking, disconnect the power cord from the AC outlet.
(3) Loosen 1 screw then take out the lamp cover below the left side of the TV.
(4) Loosen 2 screws then take out the lamp unit.
(5) Install the new lamp unit.
(6) Re-install the lamp cover.

NOTE:

- After installing the new lamp unit, do not forget to reset the lamp timer.

1.3.5 HOW TO RESET THE LAMP TIMER

- Refer to the "**USERS GUIDE**" for a detailed operating description.

(1) Press the **[MENU]** key to select SET UP.
(2) Select the <LAMP TIMER RESET> with **[▲]** / **[▼]** keys.
(3) Enter the <LAMP TIMER RESET> mode,and the message will appears.
(4) Press the **[OK]** key while the above message appears on the screen.
(5) Turn off the power, then turn on the power.
(6) The lamp timer has now been reset, as before the HOW TO CONFIRM LAMP OPERATING TIME.

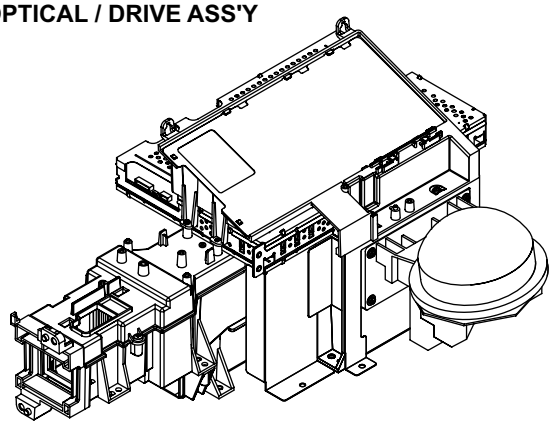
1.3.6 PRECAUTION FOR REPLACEMENT

- Do not replace the LAMP UNIT immediately after the projector has been used.
- The temperature of the LAMP UNIT is still high and could cause a burn.
- Allow a cooling period of 1 hour or more before performing replacement.
- Before starting LAMP UNIT replacement work, turn off the MAIN POWER switch, and disconnect the AC power cord plug from the wall outlet.
- If touched, the lamp glass surface may rupture and burns may result. Do not touch the glass portion or metal portion. Handle only plastic handle.
- The replaced old lamp can be discarded in the same manner as a fluorescent lamp. Check local ordinances and dispose of the used lamp as prescribed.

1.4 SERVICE PARTS KIT INSTRUCTIONS

Due to the character of this product, these OPTICAL /DRIVE ASS'Y are prepared.
Please note these OPTICAL/DRIVE ASS'Y when replacing or ordering the parts.

OPTICAL / DRIVE ASS'Y



1.4.1 PART NUMBER AND CONSTRUCTION

Kit parts number	Kit part name
TS-COP7E-SAA	OPTICAL / DRIVE ASS'Y

1.4.2 OPTICAL / DRIVE ASS'Y CONSTRUCTION

(1) OPTICAL BLOCK
(Included D-ILA DEVICE, PROJECTION LENS)
(2) OPTICAL BASE
(3) MAIN DRIVE PWB ASS'Y
This PWB is mounted with 2 memory ICs saved with adjustment, setting data of the drive circuit.
(4) SHIELD COVER
*The following parts without the kits part.

- REMOTE SENSOR PWB ASS'Y
- FAN CONTROL PWB ASS'Y
- LAMP UNIT
- LAMP FAN DUCT
- THERMOSTAT

1.4.3 PRECAUTION FOR USING

(1) In the case of the following defects/problems, replace this kit (OPTICAL/DRIVE ASS'Y)
a) Picture defect caused by optical system/D-ILA device related parts.
b) Picture defect caused by drive circuit.
(2) The MAIN DRIVE PWB ASS'Y is mounted with a memory IC [IC3741/IC3742] saved with adjustment/setting data (GAMMA, SHADING, etc.) of the drive circuit.
The data of this memory IC is in the optimal state according to individual D-ILA devices and each section of the OPTICAL BLOCK.
(3) When replace the MAIN DRIVE PWB ASS'Y, take off the 2 memory ICs from the original board and replace with new one. When replace the MAIN DRIVE PWB ASS'Y, do same manner. Replace 2 memory ICs.
(4) After the replacement of the OPTICAL BLOCK, projection lens focus adjustment and drive convergence / projection adjustment are required.

1.5 SCREEN HANDLING CAUTIONS

1.5.1 SCREEN STORAGE

Store the SCREEN ASS'Y in a standing position in order to avoid deformation. If the screen is stored horizontally, there is risk of deforming the screen face.
When necessary to place the SCREEN ASS'Y horizontally, position the screen side upwards and sure to place spacers between the screen and resting site (floor or stand etc.) to prevent the screen from sagging.

1.5.2 SCREEN SURFACE

Since the screen surface is easily scratched or soiled, use ample care when handling.

1.5.3 PRECAUTIONS FOR CLEANING AND REPLACEMENT

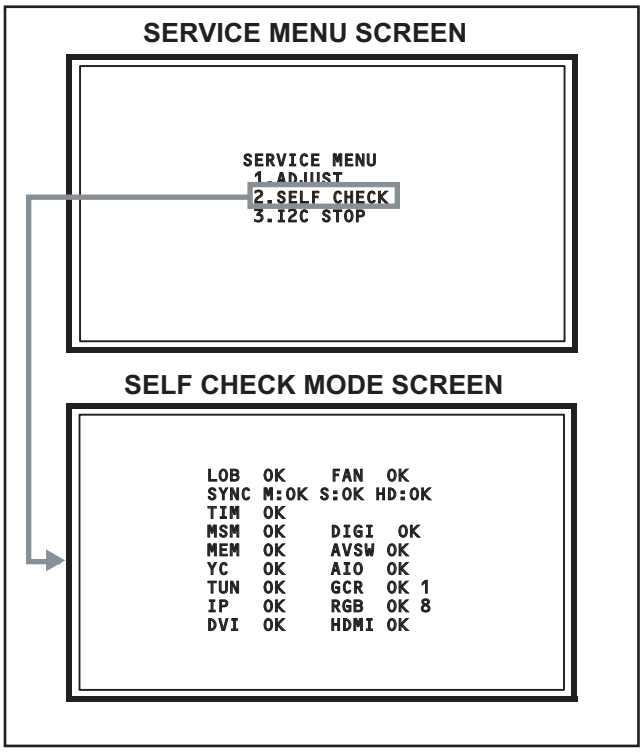
- The SCREEN ASS'Y is made from the lenticular lens and fresnel lens. The anti static proceeding and the surface of the lenticular lens. Rubbing the surface with something hard, the coating may peel off.
- When the screen is dirty, gently wipe it with a soft cloth.
  If the screen is very dirty, wipe it down with a cloth dipped in a diluted kitchen cleaner (neutrality detergent) and thoroughly wrung-out. Then wipe immediately after with clean, dry cloth.
  Never use the organic solvent such as the alcohol or benzine.
- The SCREEN ASS'Y replacement is required if the coating was peel off. Alkaline detergent or acidity detergent can not be be used.
- The notched side of the lenticular lens and the fresnel lens are faced each other.
- Do not rub the screen when cleaning it or replaceing it. Rubbing the screen may cause of the scratch of the screen by its notch.

SECTION 2
SPECIFIC SERVICE INSTRUCTIONS

2.1 SYSTEM SETTEING

Be sure to carry out the following operation at the end of the procedure.

(1) Press the **[INFORMATION]** key and **[MUTING]** key simultaneously, then enter the SERVICE MODE.
(2) When the Main Menu is displayed, press **[2]** key to enter the self check mode.
(3) Turn off the power by pressing the **[POWER]** key on the remote control unit.



2.2 FEATURES

D.I.S.T. (Digital Image Scaling Technology)
This system uses line interpolation to double the number of scanning lines and achieve high resolution, flicker-free picture.

COLOUR MANAGEMENT
This function ensures dull colours are compensated to produce natural hues.

PICTURE MANAGEMENT
This function makes it easier to see the dark areas when a picture has many dark areas, and makes it easier to see the bright areas when a picture has many bright areas.

ZOOM
This function can change the screen size according to the picture aspect ratio.

DIGITAL VNR
This function cuts down the amount of noise in the original picture.

SUPER DIGIPURE
This function uses the latest in digital technology to give you a natural-looking picture.

MOVIE THEATRE
This function displays a cinema film picture more smoothly and naturally on the screen.

3D SOUND
You can enjoy sounds with a widerambience.

2.3 MAIN DIFFERENCE LIST

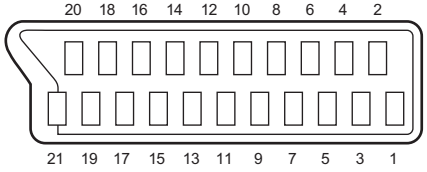
Item	HD-56ZR7J	HD-56ZR7U	HD-70ZR7J	HD-70ZR7U
TV RF System	CCIR (I)	CCIR (B/G, I, D/K, L)	CCIR (I)	CCIR (B/G, I, D/K, L)
Colour System	PAL, NTSC 3.58/4.43 [EXT only]	PAL, SECAM, NTSC 3.58/4.43 [EXT only]	PAL, NTSC 3.58/4.43 [EXT only]	PAL, SECAM NTSC 3.58/4.43 [EXT only]
Stereo System	NICAM (I)	NICAM (B/G, I, D/K, L), A2 (B/G, D/K)	NICAM (I)	NICAM (B/G, I, D/K, L), A2 (B/G, D/K)
POWER CORD	UK Type (3 Pins)	EU Type (2 Pins)	UK Type (3 Pins)	EU Type (2 Pins)
DIGITAL SIGNAL PWB	SRP0D704A-M2	SRP0D702A-M2	SRP0D703A-M2	SRP0D701A-M2

2.4 21-PIN EURO CONNECTOR (SCART) : EXT-1 / EXT-2 / EXT-3

Pin No.	Signal designation	Matching value	EXT-1	EXT-2	EXT-3
1	AUDIO R output	500mV(rms) (Nominal), Low impedance	Used (TV OUT)	Used (LINE OUT)	Not used
2	AUDIO R input	500mV(rms) (Nominal), High impedance	Used (R1)	Used (R2)	Used (R3)
3	AUDIO L output	500mV(rms) (Nominal), Low impedance	Used (TV OUT)	Used (LINE OUT)	Not used
4	AUDIO GND	---	Used	Used	Used
5	GND (B)	---	Used	Used	Used
6	AUDIO L input	500mV(rms) (Nominal), High impedance	Used (L1)	Used (L2)	Used (L3)
7	B input	$700mV_{(B-W)}$, 75Ω	Used	Used	Not used
8	FUNCTION SW (SLOW SW)	Low : 0V-3V High : 8V-12V, High impedance	Used	Used	Used
9	GND (G)	---	Used	Used	Used
10	SCL / T-V LINK	---	Not used	Used (SCL2 / TV-LINK)	Not used
11	G input	$700mV_{(B-W)}$, 75Ω	Used	Used	Not used
12	SDA	---	Not used	Used (SDA2)	Not used
13	GND (R)	---	Used	Used	Used
14	GND (YS)	---	Used	Not used	Not used
15	R / C input	R : $700mV_{(B-W)}$, 75Ω C : $300mV_{(P-P)}$, 75Ω	Used (R)	Used (C2/R)	Not used
16	Ys input (FAST SW)	Low : 0V-0.4V, High : 1V-3V, 75Ω	Used	Used	Not used
17	GND (VIDEO output)	---	Used	Used	Used
18	GND (VIDEO input)	---	Used	Used	Used
19	VIDEO output	$1V_{(P-P)}$ (Negative sync), 75Ω	Used (TV OUT)	Used (LINE OUT)	Not used
20	VIDEO / Y input	$1V_{(P-P)}$ (Negative sync), 75Ω	Used	Used	Used
21	COMMON GND	---	Used	Used	Used

(P-P= Peak to Peak, B-W= Blanking to white peak)

[Pin assignment]

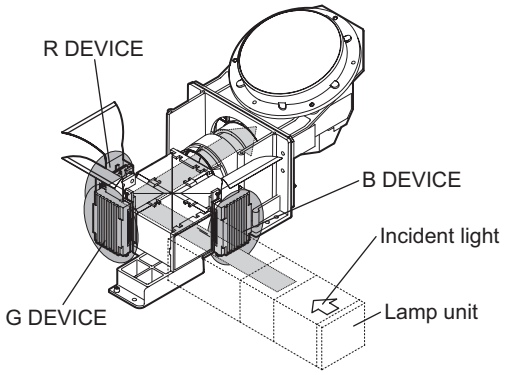


2.5 TECHNICAL INFORMATION

2.5.1 D-ILA DEVICE SPECIFICATION

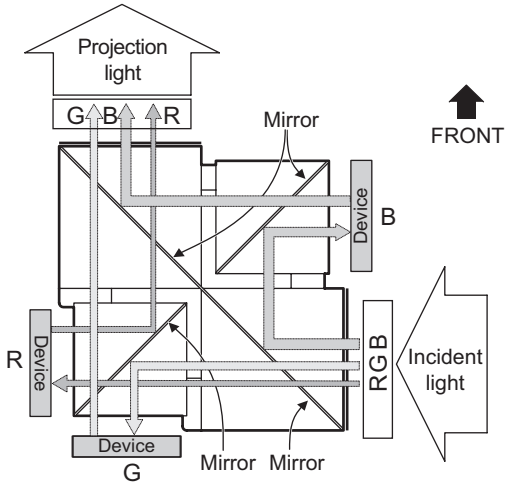
Item	Content
Resolution	H:1312 × V:800
Pixel number	about 1050000
Pixel size	H :12.0μm × V :12.0μm
Aspect ratio	16:9
Contrast ratio	1000:1
Aperture ratio	93% or more
Effective pixel measurement	0.7 inch

2.5.2 PROJECTION UNIT



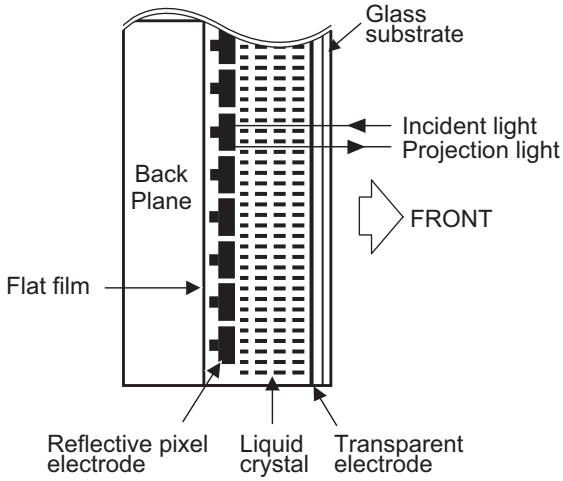
2.5.3 IMAGE LIGHT FLOW

DEVICE UNIT SECTION (TOP VIEW)

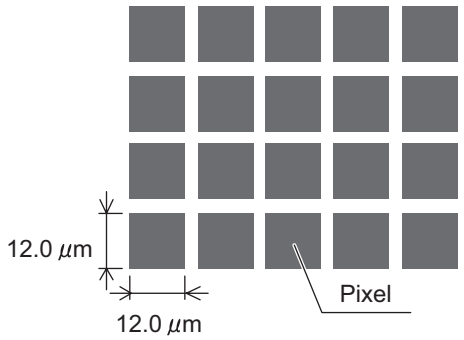


2.5.4 D-ILA DEVICE STRUCTURE

R / G / B DEVICE (SIDE VIEW)



PIXEL VIEW (FRONT VIEW)



2.5.5 MAIN CPU PIN FUNCTION [IC7501 : DIGITAL SIGNAL PWB ASS'Y]

Pin	Pin name	I/O	Function	Pin	Pin name	I/O	Function
1	TCK	O	Test purpose	65	D2	I/O	Program ROM data for main CPU
2	TMS	I	Test purpose	66	D12	I/O	Program ROM data for main CPU
3	TDI	I	Test purpose	67	D10	I/O	Program ROM data for main CPU
4	TDO	O	Test purpose	68	VSS33	-	GND
5	P2.8	O	Half tone control for IC4001	69	VDD33	I	3.3V
6	P2.9	O	Blue for OSD	70	D4	I/O	Program ROM data for main CPU
7	P2.10	O	Blue for OSD	71	D3	I/O	Program ROM data for main CPU
8	P2.11	O	Blue for OSD	72	D11	I/O	Program ROM data for main CPU
9	P2.12	O	Blue for OSD	73	RSTIN	I	Reset
10	P2.13	O	Blue for OSD	74	POWER	O	Sleep state release for chassis CPU [Relese : L]
11	P2.14	I	TV-LINK data	75	P3.1	O	Not used
12	P2.15	O	Request for chassis CPU communication	76	REMOCON	I	Remote control
13	VSS33	-	GND	77	P3.3	I	Clock for OSD
14	VDD33	I	3.3V	78	P3.4	O	Red for OSD
15	P4.5	O	TV-LINK data	79	P3.5	O	Red for OSD
16	A20	O	Program ROM address for main CPU	80	P3.6	O	Red for OSD
17	A19	O	Program ROM address for main CPU	81	P3.7	O	Red for OSD
18	A18	O	Program ROM address for main CPU	82	MTST	O	Data transmission for chassis CPU communication
19	A17	O	Program ROM address for main CPU	83	MTSR	I	Data receive for chassis CPU communication
20	VSS25	-	GND	84	VSS33	-	GND
21	VDD25	I	2.5V	85	VDD33	I	3.3V
22	A16	O	Program ROM address for main CPU	86	VSS25	-	GND
23	A8	O	Program ROM address for main CPU	87	VDD25	I	2.5V
24	A7	O	Program ROM address for main CPU	88	TXD0	O	Not used: Communication for adjustment
25	A9	O	Program ROM address for main CPU	89	RXD0	I	Not used: Communication for adjustment
26	A6	O	Program ROM address for main CPU	90	P3.12	O	Red for OSD
27	A5	O	Program ROM address for main CPU	91	CLK	O	Clock for chassis CPU communication
28	A10	O	Program ROM address for main CPU	92	P3.15	O	Not used
29	A11	O	Program ROM address for main CPU	93	P5.14	O	Green for OSD
30	A12	O	Program ROM address for main CPU	94	P5.15	O	Green for OSD
31	VSS33	-	GND	95	TRIG_IN	O	Green for OSD
32	VDD33	I	3.3V	96	TRIG_OUT	O	Green for OSD
33	A4	O	Program ROM address for main CPU	97	P6.2	O	Green for OSD
34	A3	O	Program ROM address for main CPU	98	P6.3	O	I^2C bus clock (for main memory)
35	A2	O	Program ROM address for main CPU	99	P6.4	I/O	I^2C bus Data (for main memory)
36	A1	O	Program ROM address for main CPU	100	P6.5	O	Teletext signal select [Analog RGB : H / Digital RGB : L]
37	A0	O	Program ROM address for main CPU	101	IRQ	O	Not used (NC)
38	A13	O	Program ROM address for main CPU	102	VSYNC	I	Vertical sync
39	RAS/A14	O	Program ROM address for main CPU	103	HSYNC	I	Horizontal sync
40	CAS/A15	O	Program ROM address for main CPU	104	COR/RSTOUT	O	Not used (NC)
41	VSS33	-	GND	105	BLANK	O	Ys for OSD / Teletext
42	VDD33	I	3.3V	106	VDD33	I	3.3V
43	MEMCLK	O	Clock for memory	107	VSS33	-	GND
44	CSSDRAM	O	Chip select for memory	108	XTAL1	I	6MHz for system clock
45	CLKEN	O	Clock enable for memory	109	XTAL2	O	6MHz for system clock
46	CSROM	O	Chip select for memory	110	VSSA	-	GND
47	RD	O	Read for memory	111	VDDA	I	2.5V
48	UDQM	O	Control buffer of memory	112	R	O	R for OSD / Teletext
49	LDQM	O	Control buffer of memory	113	G	O	G for OSD / Teletext
50	WR	O	Write for memory	114	B	O	B for OSD / Teletext
51	D15	I/O	Program ROM data for main CPU	115	VSSA	-	GND
52	VSS33	-	GND	116	VDDA	I	2.5V
53	VDD33	I	3.3V	117	CVBS2	I	Not used
54	D7	I/O	Program ROM data for main CPU	118	VSSA	-	GND
55	D0	I/O	Program ROM data for main CPU	119	VDDA	I	2.5V
56	D14	I/O	Program ROM data for main CPU	120	CVBS1B	I	Not used
57	D8	I/O	Program ROM data for main CPU	121	CVBS1A	I	Video for Teletext
58	D6	I/O	Program ROM data for main CPU	122	VSSA	-	GND
59	D1	I/O	Program ROM data for main CPU	123	VDDA	I	2.5V
60	VSS33	-	GND	124	KEY1	I	Key scan data 1 [ON : H]
61	VDD33	I	3.3V	125	KEY2	I	Key scan data 2 [ON : H]
62	D13	I/O	Program ROM data for main CPU	126	MECA_SW	I	Main power ON / OFF control [ON : L]
63	D9	I/O	Program ROM data for main CPU	127	P5.3	I	Not used (NC)
64	D5	I/O	Program ROM data for main CPU	128	TMODE	I	Test purpose

2.5.6 SUB (CHASSIS) CPU PIN FUNCTION [IC7001 : DIGITAL SIGNAL PWB ASS'Y]

Pin	Pin name	I/O	Function	Pin	Pin name	I/O	Function
1	LCD_PRO	I	Not used	51	BS_TXD	O	Not used : Data transmission for digital tuner communication
2	P_MU	O	Picture muting [Muting = H]	52	BS_RXD	I	Not used : Data receive for digital tuner communication
3	FUNC_LED	O	Not used	53	CD_INT	O	Not used : Data transmission for CARD data
4	A_MUTE	O	Audio muting [Muting = H]	54	VREF+	I	3.3V power supply
5	M_MUTE	O	Audio muting (for DUBBING OUT) [Muting = H]	55	PDP_TX	O	Data transmission for SUB (DRIVE) CPU communication
6	PC_SEL	O	RGB(PC) INPUT select	56	PDP_RX	I	Data receive for SUB (DRIVE) CPU communication
7	DIMMER_LED	O	POWER INDICATOR (LED) brightness [LOW = L]	57	SDA0	I/O	Data for Inter IC (serial) bus : EEP-ROM (IC7002)
8	ILA0	O	Not used : LCD back light lighting	58	SCL0	O	Clock for Inter IC (serial) bus : EEP-ROM (IC7002)
9	ILA1	O	Not used : LCD panel overshoot refresh timing	59	SDA_DVI	I/O	Not used : Data for Inter IC (serial) bus for panel communication
10	ILA2	O	Not used	60	SCL_DVI	O	Not used : Clock for Inter IC (serial) bus for panel communication
11	POW_LED	O	POWER LED lighting [ON = L]	61	AVSS	-	GND
12	WORD	O	Not used	62	DIGI_PHOT	I	Photo sensor for DIGITAL-IN illegal copy protection
13	MI_CK	I	Clock for MAIN (OSD) CPU communication	63	AGC	I	AGC voltage level detection
14	MI_TX	I	Data receive for MAIN (OSD) CPU communication	64	EXT_YS1	I	External YS1 signal detection
15	MI_RX	O	Data transmission for MAIN (OSD) CPU communication	65	EXT_YS2	I	External YS2 signal detection
16	MI_REQ	O	Data request for MAIN (OSD) CPU communication [Request = L]	66	VDD	I	3.3V power supply
17	VDD	I	3.3V power supply	67	DIGI_PRO	O	Not used: for DIGITAL-IN (HDMI)
18	FOSC	O	Not used (NC)	68	GR_RST	O	Not used (NC)
19	VSS	-	GND	69	GRON	O	Not used (NC)
20	X1	I	Not used : Low speed oscillatior	70	SYNC_SEL	O	Not used : Sync select for digital tuner
21	X0	O	Not used : Low speed oscillatior	71	CD_SCL	O	Not used : Clock for Inter IC (serial) bus for CARD comunication
22	VDD	I	3.3V power supply	72	CD_SDA	O	Not used : Data for Inter IC (serial) bus for CARD comunication
23	OSC1	I	System clock osillation (crystal) : 16MHz	73	SBD5	I/O	Data for writing on board (connect CN01P : for Frash ROM type)
24	OSC0	O	System clock osillation (crystal) : 16MHz	74	SBT5/RT5	I	Clock for writing on board (connect CN01P : for Frash ROM type)
25	MODE	I	Single chip mode [H = Fixed]	75	NMI	I	3.3V power supply
26	BS1.5CTL	O	Not used : Digital tuner power / reset control	76	COMP	I	Not used : AV COMPULINK III control
27	A92RES	O	Reset for IC1001(3D YC SEP / COLOUR DEMODULAT) [Reset = H]	77	REMO	I	Remote control
28	BS_RST	O	Not used : Reset for Digital tuner power / reset control [Reset = L]	78	MICON_V	I	V. sync pulse
29	LIP_RST	O	Not used: Reset for Sound delay (Lip sync)	79	WAKE	I	Reset for sub(chassis) CPU from MAIN CPU [Reset = L]
30	DIN_DTB	O	Not used	80	POWERGOOD	I	Power error detection [NG = H]
31	VMUTE	I	Interrupt detection [Detect = H]	81	REC_LED	O	LAMP LED lighting [ON = L]
32	VOUTENB	O	Not used : Video cutoff for digital tuner [OFF = L]	82	RESET	I	Reset for sub(chassis) CPU [Reset = L]
33	MDR_CON	I	Not used : System cable connection monitor for PDP	83	VDD	I	3.3V power supply
34	AVDD	I	3.3V power supply	84	SCL3A	O	Clock for Inter IC (serial) bus control
35	PFC_POWE	O	Not used : Digital tuner power control	85	SDA3A	I/O	Data for Inter IC (serial) bus control
36	DsyncSW2	O	Sync select for DIGITAL-IN [Cotrolled with 99-pin]	86	SCL3B	O	Clock for Inter IC (serial) bus control
37	LB_POWE	O	Power control for low bias line	87	SDA3B	I/O	Data for Inter IC (serial) bus control
38	NC	O	Not used (NC)	88	DIGI_SYNCSEL	O	Not used
39	HOTPLUG	I	Not used : Video communiation monitor for receiver unit (PDP)	89	DIGI_LRSW	O	For DIGITAL-IN (HDMI)
40	MECA_SW	I	Mechanical monitor for POWER switch	90	DIGI_HP	I	Reset for HDMI process [Reset = L]
41	MAIN_PW	O	Main power control [ON = L]	91	DVI_RST	O	Not used : Reset for DVI format conversion
42	MSP_RST	O	Reset for IC1101(MULTI SOUND PROCESS) [Reset = L]	92	VSS	-	GND
43	VREF-	I	Not used	93	SCL5055	O	Clock for Inter IC (serial) bus : IC3001 (DIST process)
44	AFT2	I	Not used : AFT voltage for sub tuner	94	VFORMSEL	O	Not used : Digital tuner clock control
45	AFT1	I	AFT voltage for VHF/UHF tuner	95	SDA5055	I/O	Data for Inter IC (serial) bus : IC3001 (DIST process)
46	KEY2	I	Not used	96	OSD_SEL	O	Not used : OSD mode select
47	KEY1	I	Not used	97	NC	O	Not used (NC)
48	NC	O	Not used	98	MCmp/OTH	O	Main video select
49	REC_RSV_LED	O	Not used	99	DsyncSW1	O	Sync select for DIGITAL-IN [Cotrolled with 36-pin]
50	AC_IN	I	Not used : AC 50/60Hz detect	100	57 BUSY	I	Busy monitor for IC4001 (New DIST process)

SECTION 3
DISASSEMBLY

3.1 DISASSEMBLY PROCEDURE

CAUTION AT DISASSEMBLY:

- **Be sure to perform the SYSTEM SETTEING, at the end of the procedure.**
- Make sure that the power cord is disconnected from the outlet.
- Pay special attention not to break or damage the parts.
- When removing each board, remove the connectors as required. Taking notes of the connecting points (connector numbers) makes service procedure manageable.
- Make sure that there is no bent or stain on the connectors before inserting, and firmly insert the connectors.
- Wait until the LAMP UNIT has cool down is completely.
- While not in repair service, place the chassis back its original position.

3.1.1 FRONT SIDE DISASSEMBLY [HD-56ZR7]

3.1.1.1 REMOVING THE SPEAKER GRILL (Fig.1)

(1) Remove the 2 screws **[A]**.
(2) Remove the SPEAKER GRILL by pressing it downward.

3.1.1.2 REMOVING THE FRONT LED PWB (Fig.1)

- Remove the SPEAKER GRILL.
  (1) Remove the 1 screw **[B]**.
  (2) Remove the FRONT LED PWB.

3.1.1.3 REMOVING THE CENTRE COVER (Fig.1)

- Remove the SPEAKER GRILL.
  (1) Remove the 2 screws **[C]**.
  (2) Remove the CENTRE COVER.

3.1.1.4 REMOVING THE SPEAKER (Fig.1)

- Remove the SPEAKER GRILL.
  (1) Remove the 8 screws **[D]**.
  (2) Remove the SPEAKER.

3.1.1.5 REMOVING THE FRONT PANEL (Fig.1)

- Remove the SPEAKER GRILL.
- Remove the SPEAKER.
  (1) Remove the 12 screws **[E]** and the 10 screws **[F]**.
  (2) Remove the FRONT PANEL.

CAUTION :

- Because of the large size, at least 2 persons are recommended for removal and reassemble.

3.1.1.6 REMOVING THE SCREEN BLOCK (Fig.1)

- Remove the SPEAKER GRILL.
- Remove the FRONT PANEL.
  (1) Remove the 8 screws **[G]**.
  (2) Remove the SCREEN BLOCK.

CAUTION :

- Place the SCREEN BLOCK on a flat table without fail.
- Because of the large size, at least 2 persons are recommended for removal and reassemble.
- Use care not to scratch the screen during work.
- During assembly, be sure to engage the left and right tabs with the cabinet mounting positions.
- When supporting the SCREEN BLOCK, avoid grasping the top of the screen panel, instead grasp the left and right areas.
- Do not leave the SCREEN BLOCK removed for long time to prevent soiling from dust.

3.1.1.7 REMOVING THE SCREEN ASS'Y (Fig.1)

- Remove the SPEAKER GRILL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
  (1) Remove the 12 screws **[H]**.
  (2) Remove the SCREEN BRACKET from the FRONT BRACKET.
  (3) Remove the SCREEN ASS'Y.

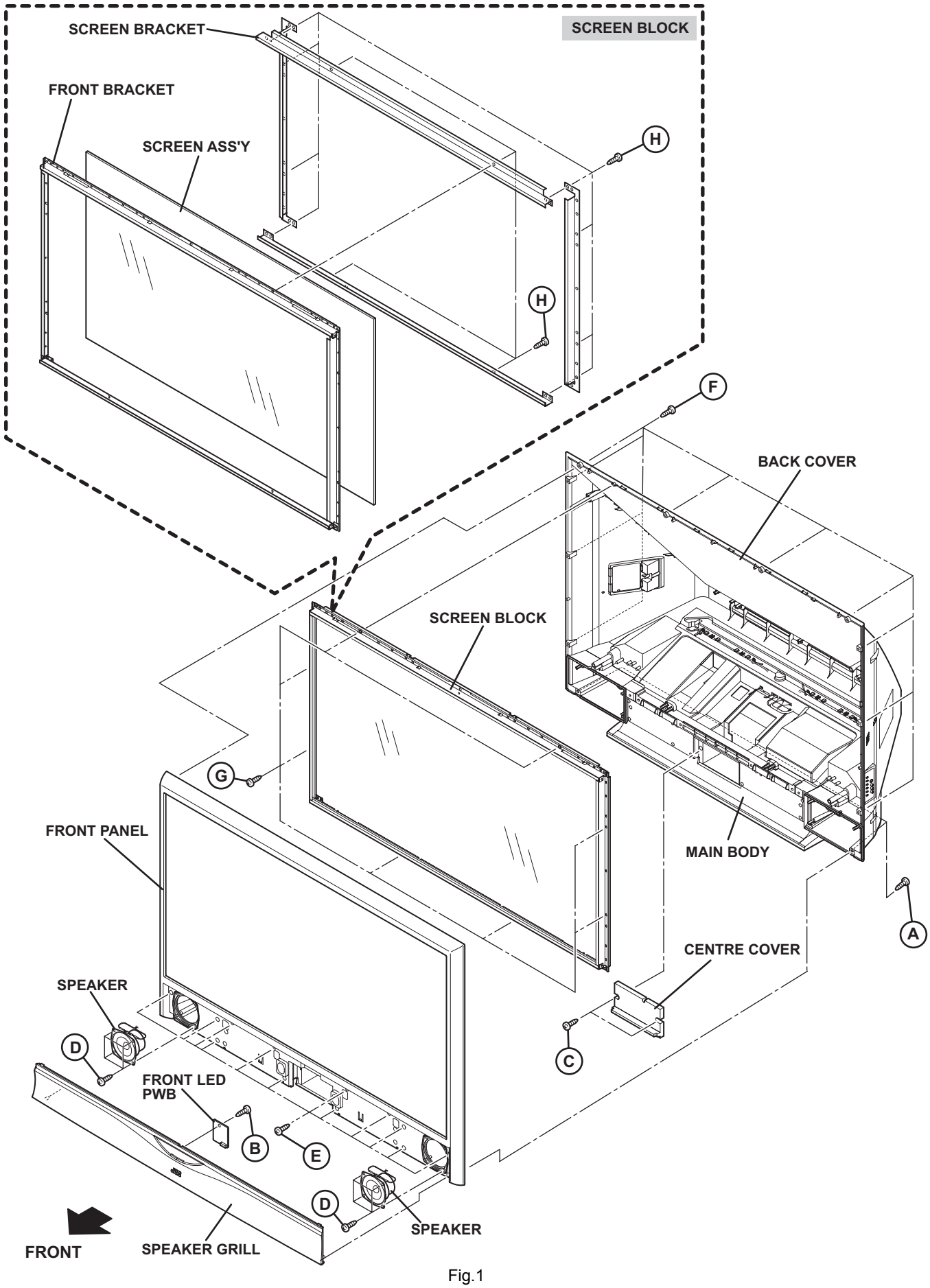

SCREEN BRACKET
SCREEN BLOCK
FRONT BRACKET
SCREEN ASS'Y
H
H
F
BACK COVER
SCREEN BLOCK
G
FRONT PANEL
MAIN BODY
A
CENTRE COVER
SPEAKER
C
D
FRONT LED PWB
B
E
D
SPEAKER
FRONT
SPEAKER GRILL

Fig.1

3.1.1.8 REMOVING THE MIRROR (Fig.2)

- Remove the SPEAKER GRILL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
  (1) Remove the 4 screws **[A]** attaching the MIRROR HOLDER (top).
  (2) Remove the 6 screws **[B]** attaching the MIRROR HOLDER (side).
  (3) Raise slightly to disengage of the MIRROR from the bottom holder.
  (4) Remove the MIRROR.

NOTE :

- Do not touch the front of the MIRROR.
- Do not shock the the MIRROR.
- Because of the large size, at least 2 persons are recommended for removal and reassemble.

3.1.1.9 REMOVING THE SIDE CONTROL PWB (Fig.2)

- Remove the SPEAKER GRILL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
  (1) Remove the 2 screws **[C]**.
  (2) Remove the SIDE CONTROL BASE.
  (3) Remove the 2 screws **[D]**.
  (4) Remove the SIDE CONTROL PWB.

3.1.1.10 REMOVING THE SUPPORT HOLDER (Fig.2)

- Remove the SPEAKER GRILL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
  (1) Remove the 2 screws **[E]**.
  (2) Remove the SUPPORT HOLDER.

3.1.1.11 REMOVING THE BACK COVER (Fig.2)

- Remove the SPEAKER GRILL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
- Remove the SUPPORT HOLDER.
  (1) Remove the 6 screws **[F]**, the 2 screws **[G]** and the 2 screws **[H]**.
  (2) Remove the BACK COVER.

CAUTION :

- Because of the large size, at least 2 persons are recommended for removal and reassemble.

3.1.1.12 REMOVING THE SPEAKER BOX (Fig.2)

- Remove the SPEAKER GRILL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
- Remove the SUPPORT HOLDER.
- Remove the BACK COVER.
  (1) Remove the 2 screws **[J]**.
  (2) Remove the SPEAKER BOX.

3.1.1.13 REMOVING THE FILTER (Fig.2)

(1) Remove the 2 screws **[K]**.
(2) Remove the FILTER COVER with the FILTER.
(3) Remove the FILTER.

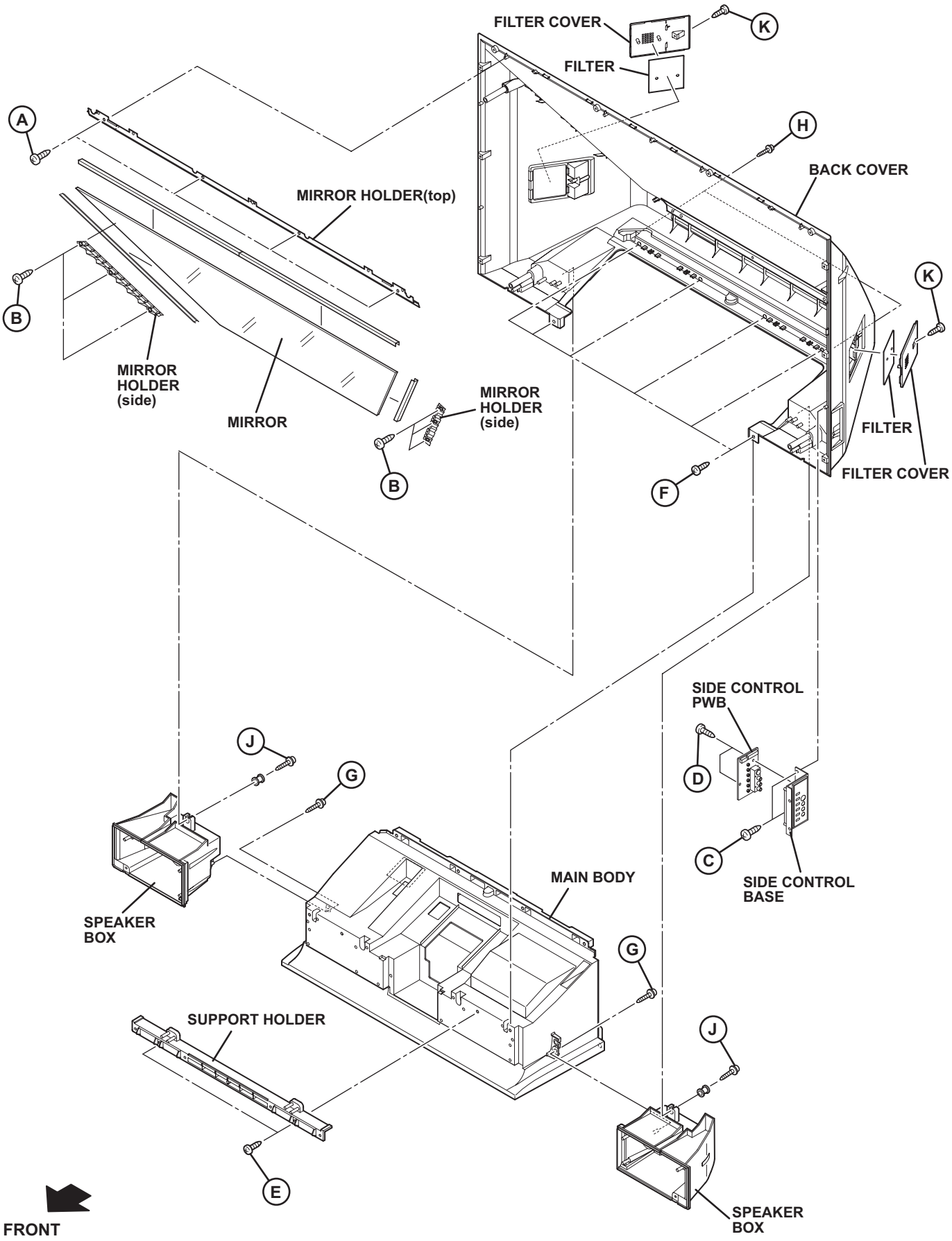

FILTER COVER
K
FILTER
A
H
BACK COVER
MIRROR HOLDER(top)
B
K
MIRROR HOLDER (side)
MIRROR
MIRROR HOLDER (side)
B
FILTER
F
FILTER COVER
SIDE CONTROL PWB
J
G
D
C
SIDE CONTROL BASE
MAIN BODY
SPEAKER BOX
G
SUPPORT HOLDER
J
E
SPEAKER BOX
FRONT

Fig.2

3.1.2 FRONT SIDE DISASSEMBLY [HD-70ZR7]

3.1.2.1 REMOVING THE SPEAKER GRILL (Fig.3)

(1) Remove the 1 screw **[A]** and the 1 screw **[B]**.
(2) Remove the SPEAKER GRILL.

3.1.2.2 REMOVING THE CENTRE PANEL (Fig.3)

- Remove the SPEAKER GRILL.
  (1) Remove the 2 screws **[C]**, then remove the CENTRE PANEL.

3.1.2.3 REMOVING THE FRONT LED PWB (Fig.3)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
  (1) Remove the 1 screw **[D]**.
  (2) Remove the FRONT LED PWB.

3.1.2.4 REMOVING THE CENTRE COVER (Fig.3)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
  (1) Remove the 2 screws **[E]**.
  (2) Remove the CENTRE COVER.

3.1.2.5 REMOVING THE SPEAKER (Fig.3)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
  (1) Remove the 8 screws **[F]**.
  (2) Remove the SPEAKER.

3.1.2.6 REMOVING THE FRONT PANEL (Fig.3)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the SPEAKER
  (1) Remove the 18 screws **[G]** and the 10 screws **[H]**.
  (2) Remove the FRONT PANEL.

CAUTION:

Because of the large size, at least 2 persons are recommended for removal and reassemble.

3.1.2.7 REMOVING THE SCREEN BLOCK (Fig.3)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the FRONT PANEL.
  (1) Remove the 6 screws **[J]** and the 8 screws **[K]**.
  (2) Remove the SCREEN BLOCK.

CAUTION :

- Place the SCREEN BLOCK on a flat table without fail.
- Because of the large size, at least 2 persons are recommended for removal and reassemble.
- Use care not to scratch the screen during work.
- During assembly, be sure to engage the left and right tabs with the cabinet mounting positions.
- When supporting the SCREEN BLOCK, avoid grasping the top of the screen panel, instead grasp the left and right areas.
- Do not leave the SCREEN BLOCK removed for long time to prevent soiling from dust.

3.1.2.8 REMOVING THE SCREEN ASS'Y (Fig.3)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
  (1) Remove the 11 screws **[L]**.
  (2) Remove the SCREEN BRACKET from the FRONT BRACKET.
  (3) Remove the SCREEN ASS'Y.

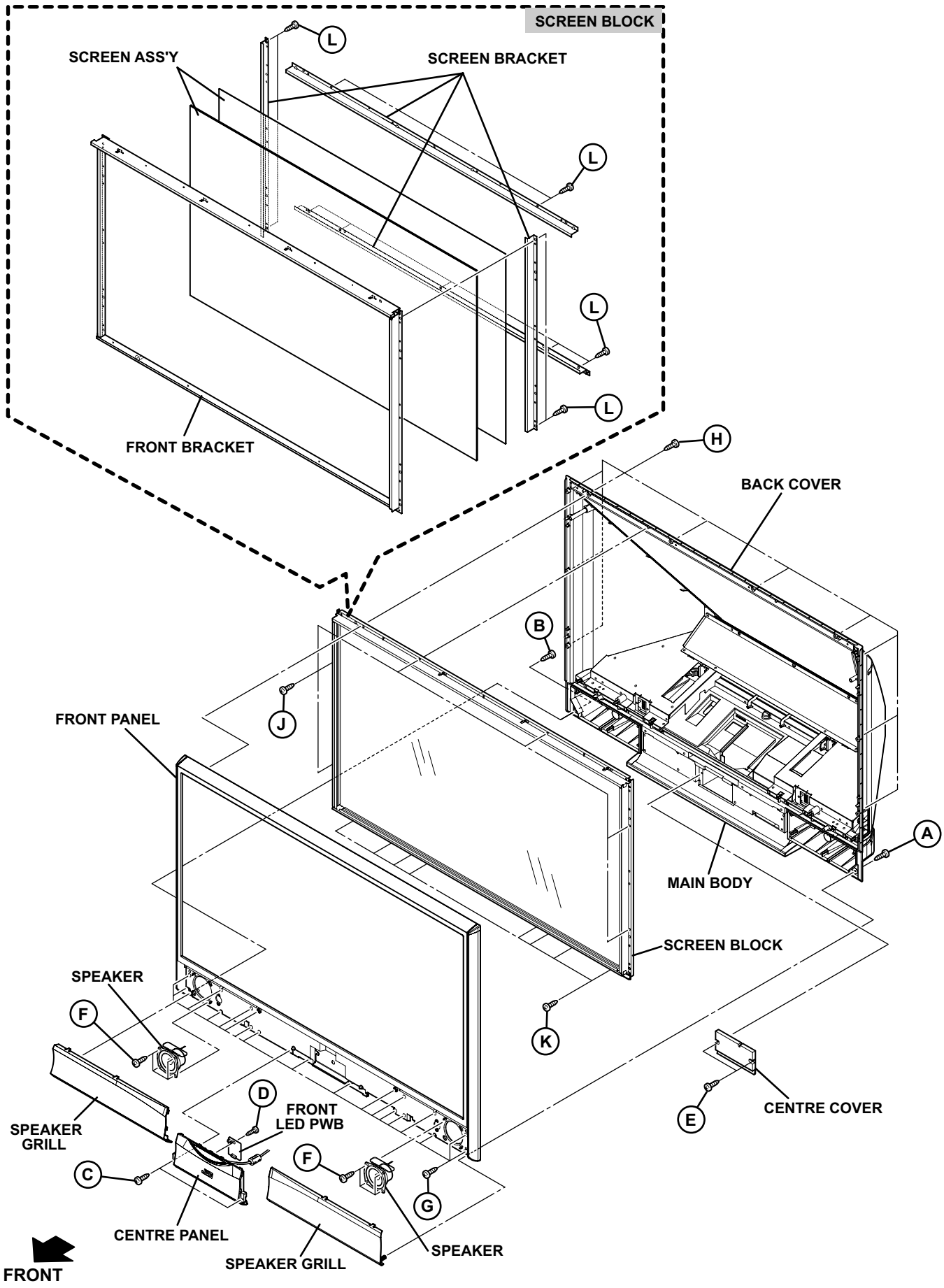

SCREEN BLOCK
SCREEN ASS'Y
SCREEN BRACKET
L
L
L
L
FRONT BRACKET
H
BACK COVER
B
J
FRONT PANEL
A
MAIN BODY
SCREEN BLOCK
K
SPEAKER
F
D
FRONT
LED PWB
SPEAKER
GRILL
C
F
G
CENTRE PANEL
SPEAKER
SPEAKER GRILL
FRONT
E
CENTRE COVER

Fig.3

3.1.2.9 REMOVING THE MIRROR (Fig.4)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.

(1) Remove the 2 screws **[A]**.
(2) Remove the MIRROR HOLDER STOPPER.
(3) Remove the 2 screws **[B]** and the 2 screws **[C]**.
(4) Remove the MIRROR HOLDER(top).
(5) Remove the 4 screws **[D]**.
(6) Remove the MIRROR HOLDER BRACKET(top).
(7) Remove the 6 screws **[E]** and the 2 screws **[F]**.
(8) Remove the MIRROR HOLDER(side).
(9) Raise slightly to disengage of the MIRROR from the bottom holder.
(10) Remove the MIRROR.

NOTE:

- Do not touch the front of the MIRROR.
- Do not shock the MIRROR.
- Because of the large size, at least 2 persons are recommended for removal and reassemble.

3.1.2.10 REMOVING THE BACK COVER BRACKET (Fig.4)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.

(1) Remove the 6 screws **[G]** and the 1 screw **[H]**.
(2) Remove the BACK COVER BRACKET(REAR).
(3) Remove the 8 screws **[J]**, the 4 screws **[K]** and the 1 screw **[L]**.
(4) Remove the BACK COVER BRACKET(both L/R and FRONT).

3.1.2.11 REMOVING THE SIDE CONTROL PWB (Fig.4)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.

(1) Remove the 4 screws **[M]**.
(2) Remove the SIDE CONTROL BASE.
(3) Remove the 2 screws **[N]**.
(4) Remove the SIDE CONTROL PWB.

3.1.2.12 REMOVING THE SPEAKER BOX (Fig.4)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
- Remove the BACK COVER BRACKET.

(1) Remove the 6 screws **[P]**.
(2) Remove the SPEAKER BOX.

3.1.2.13 REMOVING THE BACK COVER (Fig.4)

- Remove the SPEAKER GRILL.
- Remove the CENTRE PANEL.
- Remove the FRONT PANEL.
- Remove the SCREEN BLOCK.
- Remove the BACK COVER BRACKET.
- Remove the SPEAKER BOX.

(1) Remove the 4 screws **[Q]** and the 2 screws **[R]**.
(2) Remove the BACK COVER.

CAUTION:

Because of the large size, at least 2 persons are recommended for removal and reassemble.

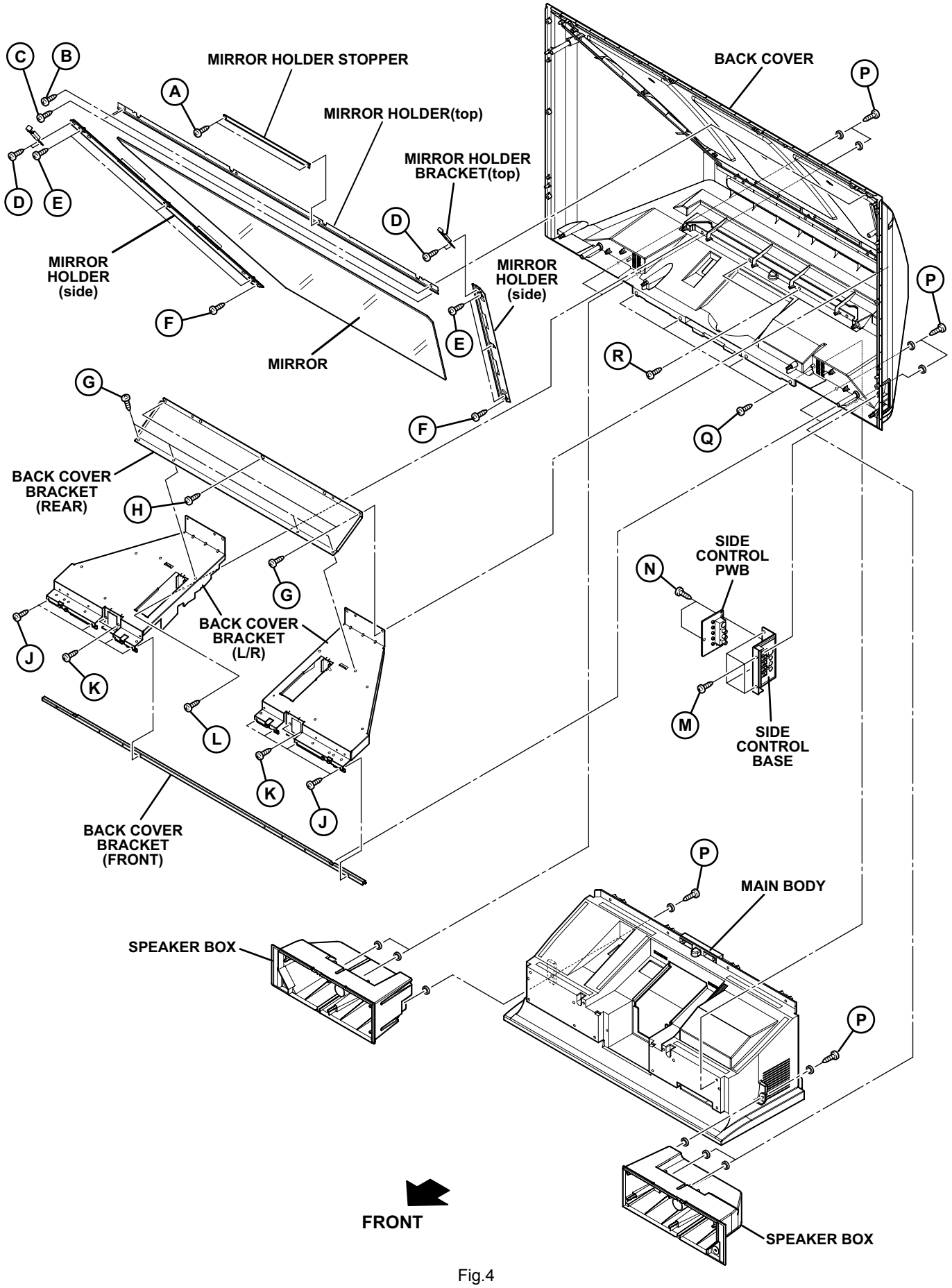

MIRROR HOLDER STOPPER
MIRROR HOLDER(top)
MIRROR HOLDER BRACKET(top)
MIRROR HOLDER (side)
MIRROR
MIRROR HOLDER (side)
BACK COVER
BACK COVER BRACKET (REAR)
BACK COVER BRACKET (L/R)
BACK COVER BRACKET (FRONT)
SIDE CONTROL PWB
SIDE CONTROL BASE
MAIN BODY
SPEAKER BOX
SPEAKER BOX
FRONT
A
B
C
D
E
F
G
H
J
K
L
M
N
P
Q
R

Fig.4

3.1.3 REAR SIDE DISASSEMBLY

3.1.3.1 REMOVING THE LAMP UNIT (Fig.5)

(1) Remove the 1 screw **[A]**.
(2) Remove the LAMP COVER.
(3) Remove the 2 screws **[B]**.
(4) Pull out the LAMP UNIT.

NOTE :

- Do not leave the LAMP COVER removed for long time to prevent dirt and dust form covering the lens.
- Make sure that the LAMP COVER is completely installed.

3.1.3.2 REMOVING THE BODY COVER (Fig.5)

(1) Remove the 5 screws **[C]** and the 9 screws **[D]**.
(2) Remove the 2 screws **[E] [HD-56ZR7]**.
(3) Remove the BODY COVER.

CAUTION :

In case of HD-70ZR7, the 2 screws **[E]** are not used, and do not install screws in these screw holes by force.

NOTE:

Do not leave the BODY COVER removed for long time to prevent soiling from dust.

3.1.3.3 REMOVING THE MAIN UNIT (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.

(1) Remove the 4 screws **[F]**.
(2) Remove the BODY BRACKET.
(3) Remove the 2 screws **[G]**.
(4) Remove the connectors "FL", "FJ", "SW" and "SP&HJ".
(5) The MAIN UNIT is pulled out to the back side.

CAUTION :

- **Except for confirmation of projection images on the screen and audio output through the speakers, the removed MAIN UNIT is still workable in the same state as if it is still built-in the TV set. Therefore, the MAIN UNIT can be removed, if necessary, for board diagnosis, electric testing, etc. apart from confirmation of screen images and audio output. Do not leave the MAIN UNIT removed for long time to prevent soiling from dust.**
- **Because of the large size, at least 2 persons are recommended for removal and reassemble.**
- **When carrying the MAIN UNIT, use care not to drop, shock or shake it.**
- **Do not stain or damage the projection lens.**
- **Do not look directly at the light during service.**
- **Do not touch the lamp directly as it presents a burn hazard.**

NOTE :

- When not performing repair work, attach the cap on the lens to preventing dust from covering.
- When mounting to the set, make sure the front of the lens is in contact with the cushion on the set (body) side.
- Make sure that FRONT LED PWB connector is completely connect to the RECEIVER PWB connector.
- When wire clamps are removed during work, use care to restore them precisely to their original positions.
  Performance can be affected if these are not returned to the original positions.

3.1.3.4 REMOVING THE POWER PWB (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.

(1) Remove the POWER CORD.
(2) Remove the 5 screws **[H]**.
(3) Remove the POWER PWB.

3.1.3.5 REMOVING THE AV TERMINAL BOARD (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.

(1) Remove the POWER CORD.
(2) Remove the 2 screws **[J]**, the 2 screws **[K]** , the 4 screws **[L]** and the 2 hex screws **[M]**.
(3) Remove the 1 screw **[N]** and the nut attaching the ANTENNA TERMINAL.
(4) Remove the AV TERMINAL BOARD.

3.1.3.6 REMOVING THE REAR JACK PWB (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the AV TERMINAL BOARD.

(1) Remove the 2 screws **[P]**.
(2) Remove the REAR JACK PWB.

3.1.3.7 REMOVING THE RECEIVER PWB (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the AV TERMINAL BOARD.
- Remove the REAR JACK PWB.

(1) Remove the 4 screws **[Q]**.
(2) Remove the PWB HOLDER.
(3) Remove the 1 screw **[R]**.
(4) Remove the ANALOG PWB BRACKET with PWB.
(5) Remove the 4 screws **[S]**.
(6) Remove the RECEIVER PWB.

3.1.3.8 REMOVING THE ANALOG SIGNAL PWB (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the AV TERMINAL BOARD.
- Remove the REAR JACK PWB.
- Remove the PWB HOLDER.
- Remove the RECEIVER PWB.

(1) Remove the 2 screws **[T]**.
(2) Remove the ANALOG SIGNAL PWB.

3.1.3.9 REMOVING THE REGULATOR PWB (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the AV TERMINAL BOARD.
- Remove the REAR JACK PWB.
- Remove the PWB HOLDER.
- Remove the RECEIVER PWB.
  (1) Remove the 4 screws **[U]**.
  (2) Remove the REGULATOR PWB.

3.1.3.10 REMOVING THE DIGITAL SIGNAL PWB (Fig.5)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the AV TERMINAL BOARD.
- Remove the PWB HOLDER.
  (1) Remove the 1 screw **[V]**.
  (2) Remove the EARTH WIRE.
  (3) Remove the 1 screw **[W]**.
  (4) Remove the DIGITAL SIGNAL PWB.

CAUTION :

- **Make sure to perform the "SYSTEM SETTEING" , when DIGITAL SIGNAL PWB is replaced.**
- **Especially, because the value of S039 (ILA COM) might been changed, go through next steps to confirm the setting value with the remote control unit.**
  (1) **Press [INFORMATION] key and [MUTING] key simultaneously, to enter the SERVICE MODE.**
  (2) **Press [1] key to enter the ADJUSTMENT MODE.**
  (3) **Select [S039].**
  (4) **Confirm the value to "0", and set it to "0" when not "0".**
  (5) **Press [MUTING] key, to memorize the data.**
  (6) **Press [BACK] key twice to exit the SERVICE MODE.**

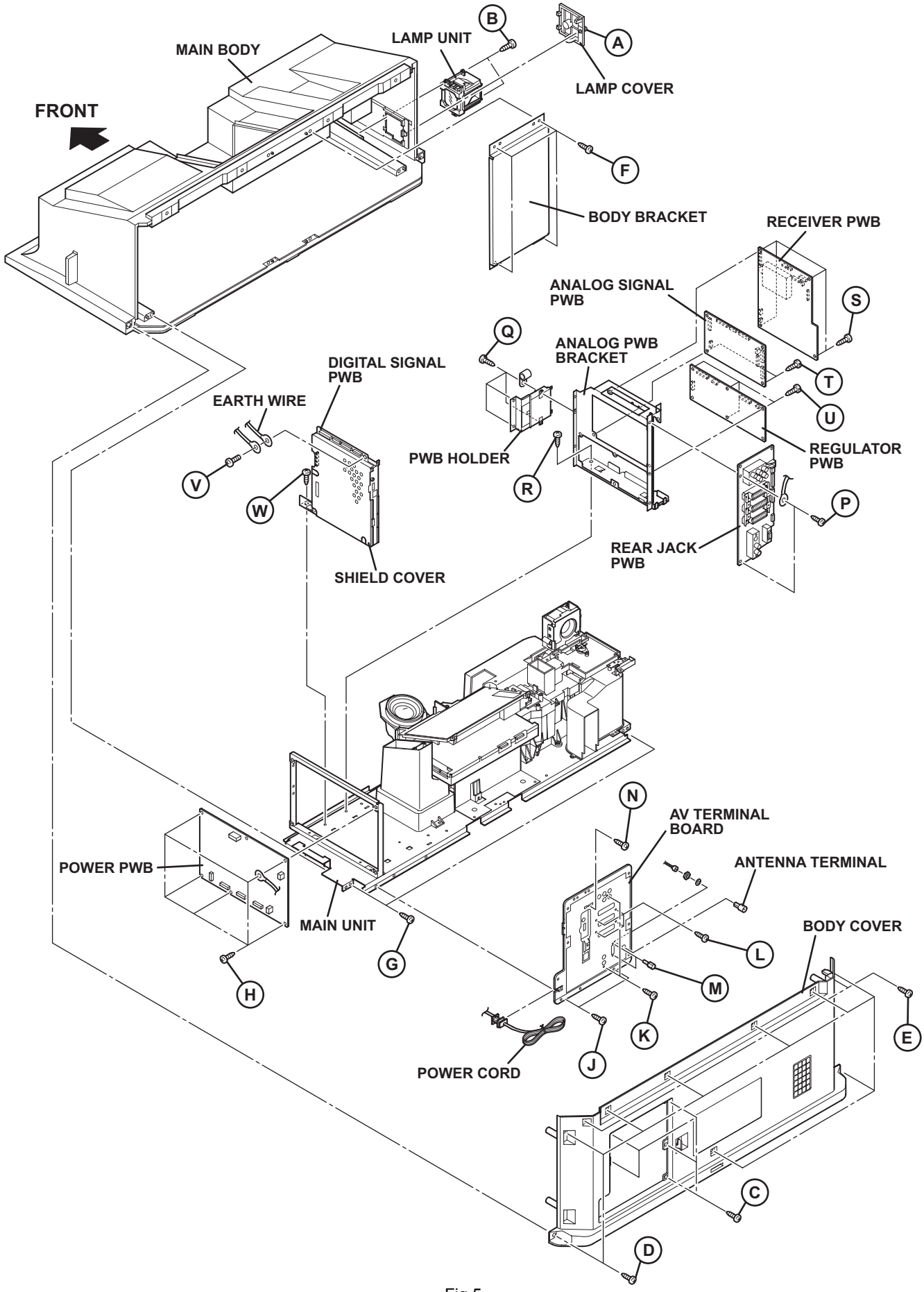

MAIN BODY
LAMP UNIT
B
A
LAMP COVER
FRONT
F
BODY BRACKET
RECEIVER PWB
ANALOG SIGNAL PWB
S
Q
ANALOG PWB BRACKET
T
U
DIGITAL SIGNAL PWB
EARTH WIRE
REGULATOR PWB
PWB HOLDER
R
V
W
P
REAR JACK PWB
SHIELD COVER
N
AV TERMINAL BOARD
ANTENNA TERMINAL
POWER PWB
MAIN UNIT
G
BODY COVER
L
H
M
K
E
POWER CORD
J
C
D

Fig.5

3.1.3.11 REMOVING THE LAMP COVER SW PWB (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Remove the 2 screws **[A]**.
  (2) Remove the LAMP COVER SW BRACKET with PWB.
  (3) Remove the 1 screw **[B]**.
  (4) Remove the LAMP COVER SW PWB.

3.1.3.12 REMOVING THE FAN CONTROL PWB (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Remove the 1 screw **[C]**.
  (2) Remove the FAN CONTROL PWB.

3.1.3.13 REMOVING THE THERMOSTAT (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Remove the 2 screws **[D]**.
  (2) Remove the THERMOSTAT.

3.1.3.14 REMOVING THE LAMP BALLAST BLOCK (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Remove the 1 screw **[E]**.
  (2) Remove the LAMP BALLAST BLOCK.
  (3) Remove the 2 screws **[F]**.
  (4) Remove the LAMP BALLAST DUCT.
  (5) Remove the 2 screws **[G]**.
  (6) Remove the LAMP BALLAST UNIT.

3.1.3.15 REMOVING THE LAMP COOLING FAN-1 (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Remove the 1 screw **[H]**.
  (2) Remove the LAMP COOLING FAN-1.

3.1.3.16 REMOVING THE LAMP COOLING FAN-2 (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the LAMP BALLAST DUCT.
  (1) Remove the 4 screws **[J]**.
  (2) Remove the LAMP FAN DUCT.
  (3) Remove the 2 screws **[K]**.
  (4) Remove the COOLING FAN BRACKET.
  (5) Remove the 4 fan mounts **[L]**.
  (6) Remove the LAMP COOLING FAN-2.

3.1.3.17 REMOVING THE OPTICAL / DRIVE ASS'Y (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the FAN CONTROL PWB.
- Remove the LAMP FAN DUCT.
  (1) Remove the 5 screws **[M]**, 6 screws **[N]** and the 1 screw **[P]**.
  (2) Remove the OPTICAL / DRIVE ASS'Y.

NOTE:

- The OPTICAL / DRIVE ASS'Y contains precision optical components.
  Handle carefully and avoid imparting strong shock.
- OPTICAL / DRIVE ASS'Y construction
  (1) Optical block:
  (D-ILA device, PBS, Field lens, Integrater, Mirror etc.)
  (2) Projection lens
  (3) Optical base
  (4) MAIN DRIVE PWB
  (5) Top duct
  (6) Shield cover
- When not performing repair work, attach the cap on the lens to preventing dust from covering.
- When mounting to the set, make sure the front of the lens side is in contact with the cushion on the body side.
- Do not leave the OPTICAL / DRIVE ASS'Y removed for long time to prevent soiling from dust.

3.1.3.18 REMOVING THE MAIN DRIVE PWB (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Slide the TOP DUCT PLATE and remove it.
  (2) Remove the 1 screw **[Q]** and the 1 screw **[R]**.
  (3) Remove the TOP DUCT.
  (4) Remove the SHIELD TOP CASE.
  (5) Remove the 3 screws **[T]** and the 1 screw **[U]**.
  (6) Remove the MAIN DRIVE PWB.

3.1.3.19 REMOVING THE PROJECTION LENS (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Remove the 5 screws **[V]**.
  (2) Remove the PROJECTION LENS.

3.1.3.20 REMOVING THE OPTICAL BLOCK COOLING FAN (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
- Remove the FAN CONTROL PWB.
- Remove the LAMP FAN DUCT.
- Remove the OPTICAL / DRIVE ASS'Y.
  (1) Remove the 2 screws **[W]**.
  (2) Remove the SIROCCO TOP CASE.
  (3) Remove the 2 screws **[X]**.
  (4) Remove the OPTICAL BLOCK COOLING FAN.

3.1.3.21 REMOVING THE REMOTE SENSOR PWB (Fig.6)

- Remove the LAMP COVER.
- Remove the BODY COVER.
- Remove the BODY BRACKET.
- Remove the MAIN UNIT.
  (1) Remove the 1 screw **[Y]**.
  (2) Remove the REMOTE SENSOR PWB.

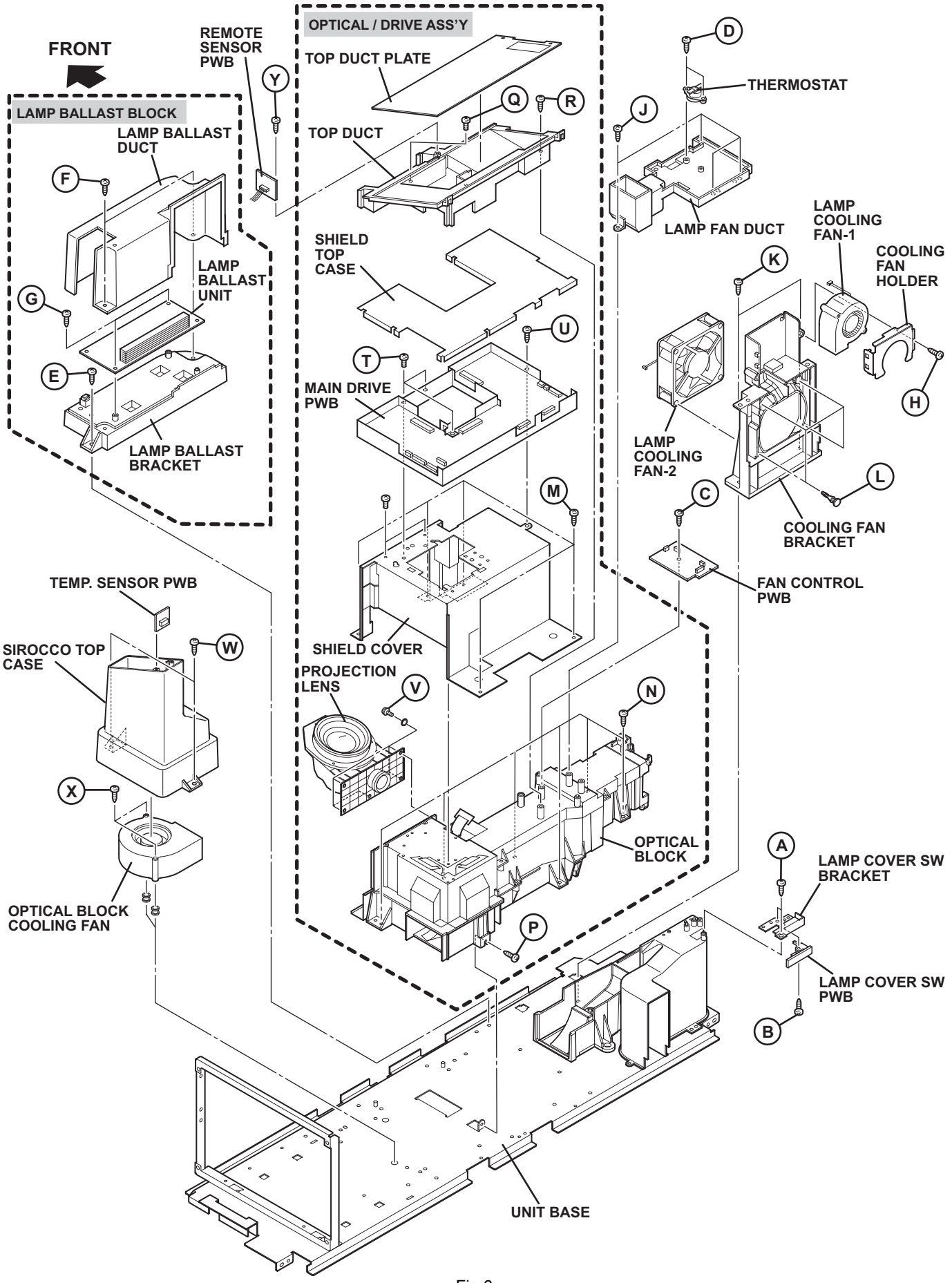

FRONT
REMOTE SENSOR PWB
Y
OPTICAL / DRIVE ASS'Y
TOP DUCT PLATE
Q
R
TOP DUCT
D
THERMOSTAT
J
LAMP FAN DUCT
LAMP BALLAST BLOCK
LAMP BALLAST DUCT
F
G
LAMP BALLAST UNIT
E
LAMP BALLAST BRACKET
SHIELD TOP CASE
U
T
MAIN DRIVE PWB
LAMP COOLING FAN-1
COOLING FAN HOLDER
K
H
LAMP COOLING FAN-2
L
C
COOLING FAN BRACKET
FAN CONTROL PWB
M
SHIELD COVER
TEMP. SENSOR PWB
W
SIROCCO TOP CASE
PROJECTION LENS
V
N
X
OPTICAL BLOCK
OPTICAL BLOCK COOLING FAN
A
LAMP COVER SW BRACKET
P
LAMP COVER SW PWB
B
UNIT BASE

Fig.6

3.2 MEMORY IC REPLACEMENT

- This model uses the memory IC.
- This memory IC stores data for proper operation of the video and drive circuits.
- When replacing, be sure to use an IC containing this (initial value) data.

3.2.1 MEMORY IC LIST

Simbol	Number of pins	Mounting PWB	Main content of data
IC4003	32-pin	DIGITAL SIGNAL PWB	Programme (video process) of IC4001(DIST) is memorized.
IC4004	8-pin	DIGITAL SIGNAL PWB	Setting value of IC4001(DIST) is memorized.
IC7002	8-pin	DIGITAL SIGNAL PWB	Setting value of IC7001(SUB [CHASSIS] CPU) is memorized.
IC7602	8-pin	DIGITAL SIGNAL PWB	Setting value of IC7501 (MAIN CPU) is memorized.

3.2.2 MEMORY IC REPLACEMENT PROCEDURE

1. Power off
Switch off the power and disconnect the power plug from the AC outlet.

2. Replace the memory IC
Be sure to use the memory IC written with the initial setting values.

3. Power on
Connect the power plug to the AC outlet and switch on the power.

4. Receiving channel setting
Refer to the OPERATING INSTRUCTIONS and set the receive channels (Channels Preset) as described.

5. User setting
Check the user setting items according to the given in page later. Where these do not agree, refer to the OPERATING INSTRUCTIONS and set the items as described.

6. SERVICE MODE setting
Verify what to set in the SERVICE MODE, and set whatever is necessary (Fig.1). Refer to the SERVICE ADJUSTMENT for setting.

3.2.3 SERVICE MODE SETTING

■SERVICE MODE SCREEN

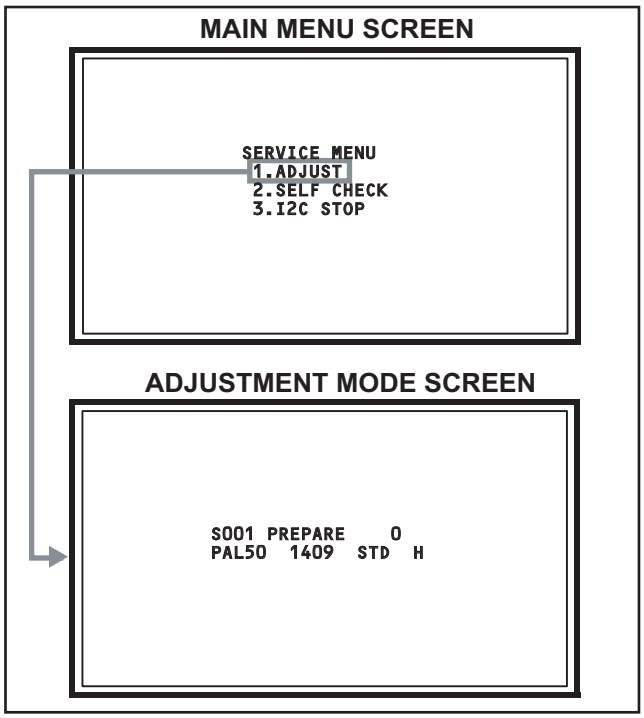


Fig.1

■SETTING ITEM

Setting items	Settings	Item No.
Video system setting	Adjust	S001 - S039
Audio system setting	Fixed	T001 - T010
Panel control system setting	Fixed	P001 - P010
Drive system setting	Fixed	D001 - D187
Main CPU system setting	Fixed	Z001 - Z010

3.2.4 SETTINGS OF FACTORY SHIPMENT

3.2.4.1 BUTTON OPERATION

Setting item	Setting position
POWER	Off
CHANNEL	PR1
VOLUME	10
TV/AV	TV

3.2.4.2 REMOTE CONTROL DIRECT OPERATION

Setting item	Setting position
CHANNEL	PR1
VOLUME	10
ZOOM	AUTO
3D SOUND	OFF

3.2.4.3 REMOTE CONTROL MENU OPERATION

(1) PICTURE

Setting item		Setting position
PICTURE MODE		BRIGHT
COLOUR TEMP.		COOL
FEATURES		
DIGITAL VNR		AUTO (LOW)
Super DigiPure		AUTO
MOVIE THEATRE		AUTO
COLOUR MANAGEMENT		ON
PICTURE MANAGEMENT		ON
COLOUR SYSTEM	TV	Depends on PR/CH
	EXT	AUTO
4:3 AUTO ASPECT		PANORAMIC

(2) SOUND

Setting item	Setting position
STEREO / I•II	Stereo sound
BASS	Centre
TREBLE	Centre
BALANCE	Centre
3D SOUND	OFF
BBE	ON

(3) FEATURES

Setting item	Setting position
SLEEP TIMER	OFF
CHILD LOCK	ID NO.0000, All CH off
APPEARANCE	TYPE D
BLUE BACK	ON
FAVOURITE SETTING	Reset
ILLUMINATION	BRIGHT

(4) SET UP

Setting item	Setting position
AUTO PROGRAM	TV channel automatically set
EDIT/MANUAL	PRESET CH only
LANGUAGE	ENGLISH
DECODER (EXT-2)	OFF
COMPONENT AUTO SELECT	ON
HDMI SETTING	AUTO
EXT SETTING	
S-IN	BLANK
ID	BLANK
DUBBING	EXT-1 → EXT-2

3.3 REPLACEMENT OF CHIP COMPONENT

3.3.1 CAUTIONS

(1) Avoid heating for more than 3 seconds.
(2) Do not rub the electrodes and the resist parts of the pattern.
(3) When removing a chip part, melt the solder adequately.
(4) Do not reuse a chip part after removing it.

3.3.2 SOLDERING IRON

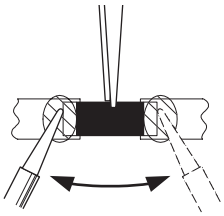
(1) Use a high insulation soldering iron with a thin pointed end of it.
(2) A 30w soldering iron is recommended for easily removing parts.

3.3.3 REPLACEMENT STEPS

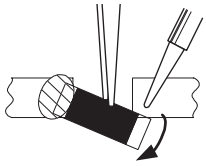
1. How to remove Chip parts

[Resistors, capacitors, etc.]

(1) As shown in the figure, push the part with tweezers and alternately melt the solder at each end.



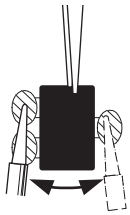
(2) Shift with the tweezers and remove the chip part.



[Transistors, diodes, variable resistors, etc.]

(1) Apply extra solder to each lead.

(2) As shown in the figure, push the part with tweezers and alternately melt the solder at each lead. Shift and remove the chip part.



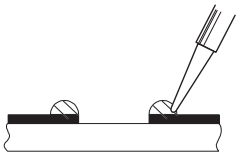
NOTE :

After removing the part, remove remaining solder from the pattern.

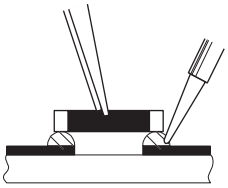
2. How to install Chip parts

[Resistors, capacitors, etc.]

(1) Apply solder to the pattern as indicated in the figure.

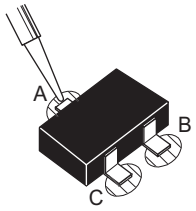


(2) Grasp the chip part with tweezers and place it on the solder. Then heat and melt the solder at both ends of the chip part.

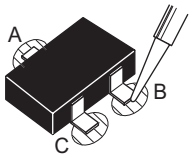


[Transistors, diodes, variable resistors, etc.]

(1) Apply solder to the pattern as indicated in the figure.
(2) Grasp the chip part with tweezers and place it on the solder.
(3) First solder lead **A** as indicated in the figure.



(4) Then solder leads **B** and **C**.



SECTION 4
ADJUSTMENT

4.1 ADJUSTMENT PREPARATION

(1) **The adjustment using the REMOTE CONTROL UNIT is made on the basis of the initial setting values. The setting values which adjust the screen to the optimum condition can be different from the initial setting values.**
(2) Make sure that connection is correctly made AC to AC power source.
(3) Turn on the power of the TV and measuring instruments for warning up for at least 30 minutes before starting adjustments.
(4) If the receive or input signal is not specified, use the most appropriate signal for adjustment.
(5) Never touch the parts (such as variable resistors, transformers and condensers) or setting items/values not shown in the adjustment items of this service adjustment.

4.2 PRESET SETTING BEFORE ADJUSTMENTS

Unless otherwise specified in the adjustment items, preset the following functions with the REMOTE CONTROL UNIT.

Setting item	Settings position
PICTURE MODE	STANDARD
PICTURE adjustments	Centre
COLOUR TEMP.	NORMAL
DIGITAL VNR	MIN
Super DigiPure	AUTO
MOVIE THEATRE	AUTO
COLOUR MANAGEMENT	ON
PICTURE MANAGEMENT	ON
SOUND adjustments	Centre
BBE	OFF
3D SOUND	OFF
ZOOM	FULL

4.3 MEASURING INSTRUMENT AND FIXTURES

- Signal generator (Pattern generator)
  [PAL / 625i / 625p / 1125i(50Hz)]
- Remote control unit

4.4 BASIC OPERATION OF SERVICE MODE

4.4.1 HOW TO ENTER THE SERVICE MODE

(1) Press the **[INFORMATION]** key and **[MUTING]** key simultaneously, to enter the SERVICE MODE. (Fig.1)

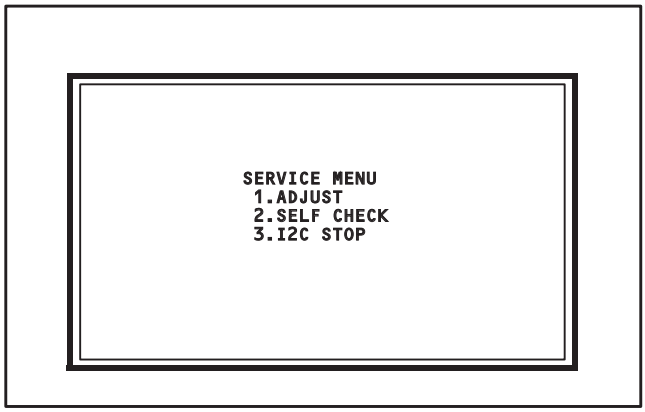


Fig.1

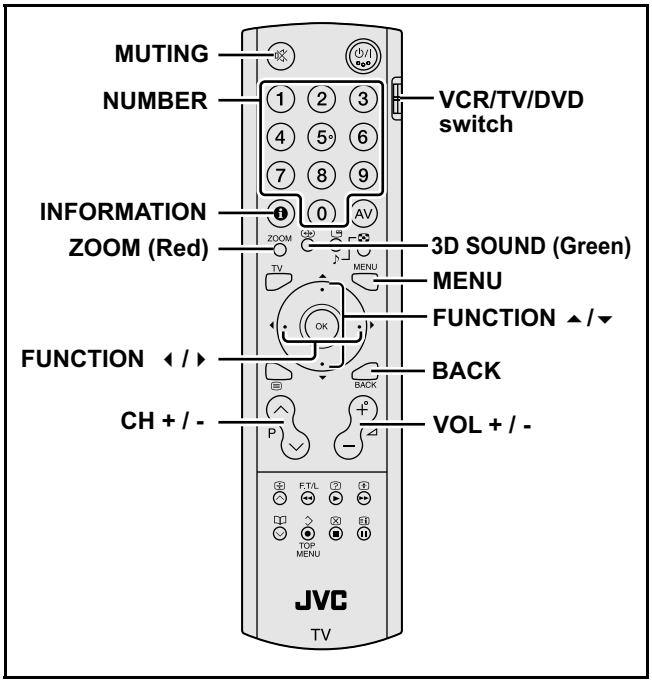
NOTE:

- Before entering the SERVICE MODE, confirm that the setting of **VCR/TV/DVD** switch of the REMOTE CONTROL UNIT is at the "**TV**" side. If the switch has not been properly set, you cannot enter the SERVICE MODE.
- When a number key other than the **[1]** or **[9]** keys is pressed in the SERVICE MENU SCREEN, the other relevant screen may be displayed.
  This is not used in the adjustment procedure. Press the **[MENU]** key to return to the SERVICE MENU SCREEN.

4.4.2 HOW TO EXIT THE SERVICE MODE

Press the **[BACK]** key to exit the Service mode.

4.4.3 SERVICE MODE SELECT KEY LOCATION



4.4.4 ADJUSTMENT MODE

This mode is used to adjust the VIDEO CIRCUIT.

4.4.4.1 HOW TO ENTER THE ADJUSTMENT MODE

When the SERVICE MENU SCREEN of SERVICE MODE is displayed, press **[1]** key to enter the **ADJUSTMENT MODE (Fig.2)**.

4.4.4.2 DESCRIPTION OF STATUS DISPLAY OF ADJUSTMENT MODE

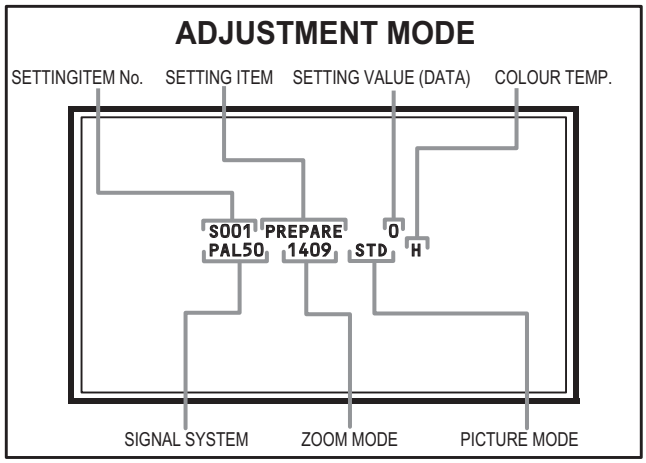


Fig.2

(1) SIGNAL SYSTEM

The signal displayed on the screen is displayed.

PAL50	: PAL50Hz (Composite / S-video)
PAL60	: PAL60Hz (Composite / S-video)
SECAM	: SECAM
NTSC3	: NTSC3.58
NTSC4	: NTSC4.43
525I	: 525i (Component)
525P	: 525p
625I	: 625i (Component)
625P	: 625p
1125I5	: 1125i 50Hz
1125I6	: 1125i 60Hz
RGB5	: RGB 525i
RGB6	: RGB 625i
PCVGA	: PC (VGA)
PCXGA	: PC (XGA)
H525I	: HDMI 525i
H525P	: HDMI 525p
H625I	: HDMI 625i
H625P	: HDMI 625p
H750P	: HDMI 750p
H125I5	: HDMI 1125i 50Hz
H125I6	: HDMI 1125i 60Hz

(2) ZOOM MODE

State of the SCREEN SIZE or MULTI PICTURE is displayed.

SINGLE SCREEN

FULL	: FULL
PANO	: PANORAMIC
1609	: 16:9 ZOOM
1609S	: 16:9 ZOOM SUBTITLE
1409	: 14:9 ZOOM
REGU	: REGULAR

MULTI SCREEN

M2	: 2-pictures multi
M12	: 12-pictures multi

(3) PICTURE MODE

STD	: STANDARD
BRI	: BRIGHT
SOFT	: SOFT

(4) WHITE BALANCE

H	: COOL
M	: NORMAL
L	: WARM

(5) SETTING ITEM NAME

Setting item name are displayed. The setting item numbers to be displayed are listed below.

Item No.	Setting item
S001 - S039	Video system setting
T001 - T010	Audio system setting
P001 - P010	Panel control system setting
D001 - D187	Drive system setting
Z001 - Z010	Main CPU system setting

(6) SETTING ITEM NO.

Setting item numbers are displayed. For the setting item names to be displayed, refer to "Initial setting value of adjustment mode".

(7) SETTING VALUE (DATA)

The SETTING VALUE is displayed.

4.4.4.3 CHANGE AND MEMORY OF SETTING VALUE

■SELECTION OF SETTING ITEM

- **[CH+]** / **[CH-]** key.
  For change of the setting items up/ down.

S001... ↔ T001... ↔ P001... ↔ D001... ↔ Z001...

■CHANGE OF SETTING VALUE (DATA)

- **[VOL+]** / **[VOL-]** key.
  For change of the setting values up/down.

■MEMORY OF SETTING VALUE (DATA)

Changed setting value is memorized by pressing **[MUTING]** key.

4.4.5 DESCRIPTION OF STATUS DISPLAY OF RGB BOX PATTERN MODE

This mode is used to adjust the DRIVE CIRCUIT.

4.4.5.1 HOW TO ENTER THE RGB BOX PATTERN MODE

When the SERVICE MENU SCREEN of SERVICE MODE is displayed, press **[9]** key to enter the **RGB BOX PATTERN MODE (Fig3)**.

4.4.5.2 DESCRIPTION OF STATUS DISPLAY OF RGB BOX PATTERN MODE

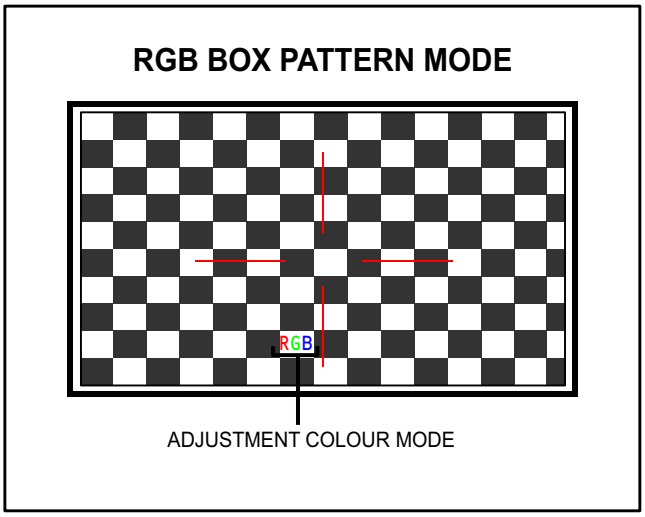


Fig.3

(1) RGB BOX PATTERN

The checkered pattern is displayed. White is a synthesis of RGB.

(2) ADJUSTMENT COLOUR MODE

Presently selected ADJUSTMENT COLOUR MODE is displayed.

■SELECTION OF SETTING ITEM

- **[CH+]** / **[CH-]** key.
  For moving the selected RGB BOX PATTERN up/ down pixel by pixel.

- **[VOL+]** / **[VOL-]** key.
  For moving the selected RGB BOX PATTERN left/ right pixel by pixel.

- **[Blue]** key.
  For resetting the data.

- **[INFORMATION]** key.
  For selecting the ADJUSTMENT COLOUR MODE.

  R → B → RGB

- **[BACK]** key.
  For returning to the SERVICE MENU SCREEN from the RGB BOX PATTERN MODE.

■MEMORY OF SETTING VALUE (DATA)

With the RGB BOX PATTERN MODE, the changed date is written in the MEMORY instantly.

4.5 INITIAL SETTING VALUES IN THE SERVICE MODE

- Perform fine-tuning based on the "initial values" using the remote control when in the Service mode.
- The "initial values" serve only as an indication rough standard and therefore the values with which optimal display can be achieved may be different from the default values. But, don't change the values that are not written in "ADJUSTMENT PROCEDURE". They are fixed values.

4.5.1 VIDEO SYSTEM SETTING

Item No.	Item	Variable range	Setting value
S001	PREPARE	0 - 31	0
S002	NTSC BL	0 - 15	0
S003	NTSC CNT	0 - 255	43
S004	NT CR OF	0 - 15	6
S005	NT CB OF	0 - 15	7
S006	525i BL	0 - 15	0
S007	525i CNT	0 - 255	43
S008	5i CB OF	0 - 15	0
S009	5i CR OF	0 - 15	0
S010	5i CR GN	0 - 15	6
S011	5i CB GN	0 - 15	7
S012	HD BL	0 - 63	57
S013	HD CB OF	0 - 63	53
S014	HD CR OF	0 - 63	55
S015	RT CONT	0 - 15	8
S016	RT CB OF	0 - 15	2
S017	RT CR OF	0 - 15	5
S018	RT CL GA	0 - 15	8
S019	PC CL MB	0 - 7	0
S020	PC CL LB	0 - 31	0
S021	PC CL MR	0 - 7	0
S022	PC CL LR	0 - 31	0
S023	(Not display)	0 - 255	0
S024	(Not display)	0 - 255	0
S025	(Not display)	0 - 255	0
S026	(Not display)	0 - 255	0
S027	(Not display)	0 - 255	0
S028	(Not display)	0 - 255	0
S029	(Not display)	0 - 255	0
S030	R DRIVE	0 - 255	116
S031	G DRIVE	0 - 255	128
S032	B DRIVE	0 - 255	105
S033	(Not display)	0 - 255	0
S034	(Not display)	0 - 255	0
S035	(Not display)	0 - 255	0
S036	(Not display)	0 - 255	0
S037	(Not display)	0 - 255	0
S038	(Not display)	0 - 255	0
S039	ILA COM	0 - 1	0

4.5.2 AUDIO SYSTEM SETTING (Fixed values)

Item No.	Item	Variable range	Setting value
T001	IN LEVEL	0 - 255	0
T002	LOW SEP	0 - 255	0
T003	HIGH SEP	0 - 255	0
T004	AFC	0 - 255	0
T005	(Not display)	0 - 255	0
T006	ATT V ON	0 - 1	0
T007	ATT U ON	0 - 1	0
T008	ATT C ON	0 - 1	0
T009	(Not display)	0 - 255	0
T010	(Not display)	0 - 255	0

4.5.3 PANEL CONTOROL SYSTEM SETTING (Fixed values)

Item No.	Item	Variable range	Setting value
P001	TM HOR H	00 - FF	00
P002	TM HOR L	00 - FF	00
P003	TM MIN	00 - FF	00
P004	TEMP	0 - 255	0
P005	(Not display)	0 - 255	0
P006	(Not display)	0 - 255	0
P007	(Not display)	0 - 255	0
P008	(Not display)	0 - 255	0
P009	(Not display)	0 - 255	0
P010	(Not display)	0 - 255	0

4.5.4 DRIVE SYSTEM SETTING (Fixed values)

Item No.	Item	Variable range	Setting value
D001	SLV GN	00 - 3F	12
D002	SLVH GN	00 - 3F	16
D003	SLH GN	00 - 3F	24
D004	SLV Pf	00 - 03	01
D005	SLH Pf H	00 - 01	01
D006	SLH Pf L	00 - 03	01
D007	SL EGCON	00 - 3F	06
D008	SL EGONF	00 - 01	01
D009	SL CRGON	00 - 3F	04
D010	SL CRGON	00 - 01	01
D011	SL ON OF	00 - 01	01
D012	SV GN	00 - 3F	12
D013	SVH GN	00 - 3F	14
D014	SH GN	00 - 3F	1C
D015	SV Pf	00 - 03	01
D016	SV PfH	00 - 01	01
D017	SV PfL	00 - 03	01
D018	SYL CON	00 - 3F	28
D019	SYL CONF	00 - 01	01

Item No.	Item	Variable range	Setting value
D020	SYH CON	00 - 3F	20
D021	SYH CONF	00 - 01	01
D022	SC CON	00 - 3F	1E
D023	SC CNONF	00 - 01	01
D024	SPM BLC	00 - 3F	01
D025	SPM BLCO	00 - 01	01
D026	SLIM	00 - 3F	28
D027	SLIMONF	00 - 01	01
D028	SCRG	00 - 3F	02
D029	SRGONF	00 - 01	01
D030	S ONF	00 - 01	01
D031	pb GN	00 - 3F	12
D032	pb PfH	00 - 01	00
D033	pb PfL	00 - 03	03
D034	pb CRG	00 - 3F	16
D035	pb CRGON	00 - 01	01
D036	pb ONF	00 - 01	01
D037	pr GN	00 - 3F	12
D038	pr PfH	00 - 01	00
D039	pr PfL	00 - 03	03
D040	pr CRG	00 - 3F	12
D041	pr CRGON	00 - 01	01
D042	pr ONF	00 - 01	01
D043	ENH ONF	00 - 01	01
D044	(Not display)	00 - FF	00
D045	(Not display)	00 - FF	00
D046	(Not display)	00 - FF	00
D047	(Not display)	00 - FF	00
D048	(Not display)	00 - FF	00
D049	(Not display)	00 - FF	00
D050	(Not display)	00 - FF	00
D051	(Not display)	00 - FF	00
D052	(Not display)	00 - FF	00
D053	(Not display)	00 - FF	00
D054	(Not display)	00 - FF	00
D055	(Not display)	00 - FF	00
D056	(Not display)	00 - FF	00
D057	(Not display)	00 - FF	00
D058	(Not display)	00 - FF	00
D059	(Not display)	00 - FF	00
D060	(Not display)	00 - FF	00
D061	(Not display)	00 - FF	00
D062	(Not display)	00 - FF	00
D063	(Not display)	00 - FF	00
D064	(Not display)	00 - FF	00
D065	(Not display)	00 - FF	00
D066	(Not display)	00 - FF	00
D067	(Not display)	00 - FF	00
D068	(Not display)	00 - FF	00
D069	(Not display)	00 - FF	00

Item No.	Item	Variable range	Setting value
D070	(Not display)	00 - FF	00
D071	(Not display)	00 - FF	00
D072	(Not display)	00 - FF	00
D073	(Not display)	00 - FF	00
D074	(Not display)	00 - FF	00
D075	(Not display)	00 - FF	00
D076	(Not display)	00 - FF	00
D077	(Not display)	00 - FF	00
D078	(Not display)	00 - FF	00
D079	(Not display)	00 - FF	00
D080	(Not display)	00 - FF	00
D081	(Not display)	00 - FF	00
D082	(Not display)	00 - FF	00
D083	(Not display)	00 - FF	00
D084	(Not display)	00 - FF	00
D085	(Not display)	00 - FF	00
D086	(Not display)	00 - FF	00
D087	(Not display)	00 - FF	00
D088	(Not display)	00 - FF	00
D089	(Not display)	00 - FF	00
D090	(Not display)	00 - FF	00
D091	(Not display)	00 - FF	00
D092	(Not display)	00 - FF	00
D093	(Not display)	00 - FF	00
D094	(Not display)	00 - FF	00
D095	(Not display)	00 - FF	00
D096	(Not display)	00 - FF	00
D097	(Not display)	00 - FF	00
D098	(Not display)	00 - FF	00
D099	(Not display)	00 - FF	00
D100	(Not display)	00 - FF	00
D101	(Not display)	00 - FF	00
D102	(Not display)	00 - FF	00
D103	(Not display)	00 - FF	00
D104	(Not display)	00 - FF	00
D105	(Not display)	00 - FF	00
D106	(Not display)	00 - FF	00
D107	(Not display)	00 - FF	00
D108	(Not display)	00 - FF	00
D109	(Not display)	00 - FF	00
D110	(Not display)	00 - FF	00
D111	(Not display)	00 - FF	00
D112	(Not display)	00 - FF	00
D113	(Not display)	00 - FF	00
D114	(Not display)	00 - FF	00
D115	(Not display)	00 - FF	00
D116	(Not display)	00 - FF	00
D117	(Not display)	00 - FF	00
D118	(Not display)	00 - FF	00
D119	(Not display)	00 - FF	00

Item No.	Item	Variable range	Setting value
D120	(Not display)	00 - FF	00
D121	(Not display)	00 - FF	00
D122	(Not display)	00 - FF	00
D123	(Not display)	00 - FF	00
D124	(Not display)	00 - FF	00
D125	(Not display)	00 - FF	00
D126	(Not display)	00 - FF	00
D127	(Not display)	00 - FF	00
D128	(Not display)	00 - FF	00
D129	(Not display)	00 - FF	00
D130	(Not display)	00 - FF	00
D131	(Not display)	00 - FF	00
D132	(Not display)	00 - FF	00
D133	(Not display)	00 - FF	00
D134	(Not display)	00 - FF	00
D135	(Not display)	00 - FF	00
D136	(Not display)	00 - FF	00
D137	(Not display)	00 - FF	00
D138	(Not display)	00 - FF	00
D139	(Not display)	00 - FF	00
D140	(Not display)	00 - FF	00
D141	(Not display)	00 - FF	00
D142	(Not display)	00 - FF	00
D143	(Not display)	00 - FF	00
D144	(Not display)	00 - FF	00
D145	(Not display)	00 - FF	00
D146	(Not display)	00 - FF	00
D147	(Not display)	00 - FF	00
D148	(Not display)	00 - FF	00
D149	(Not display)	00 - FF	00
D150	(Not display)	00 - FF	00
D151	(Not display)	00 - FF	00
D152	(Not display)	00 - FF	00
D153	(Not display)	00 - FF	00
D154	(Not display)	00 - FF	00
D155	(Not display)	00 - FF	00
D156	(Not display)	00 - FF	00
D157	(Not display)	00 - FF	00
D158	(Not display)	00 - FF	00
D159	(Not display)	00 - FF	00
D160	(Not display)	00 - FF	00
D161	(Not display)	00 - FF	00
D162	(Not display)	00 - FF	00
D163	(Not display)	00 - FF	00
D164	(Not display)	00 - FF	00
D165	(Not display)	00 - FF	00
D166	(Not display)	00 - FF	00
D167	(Not display)	00 - FF	00
D168	(Not display)	00 - FF	00
D169	(Not display)	00 - FF	00
D170	(Not display)	00 - FF	00
D171	(Not display)	00 - FF	00
D172	(Not display)	00 - FF	00
D173	(Not display)	00 - FF	00
D174	(Not display)	00 - FF	00
D175	(Not display)	00 - FF	00
D176	(Not display)	00 - FF	00
D177	(Not display)	00 - FF	00
D178	(Not display)	00 - FF	00
D179	(Not display)	00 - FF	00
D180	(Not display)	00 - FF	00
D181	(Not display)	00 - FF	00
D182	(Not display)	00 - FF	00
D183	(Not display)	00 - FF	00
D184	(Not display)	00 - FF	00
D185	(Not display)	00 - FF	00
D186	(Not display)	00 - FF	00
D187	(Not display)	00 - FF	00

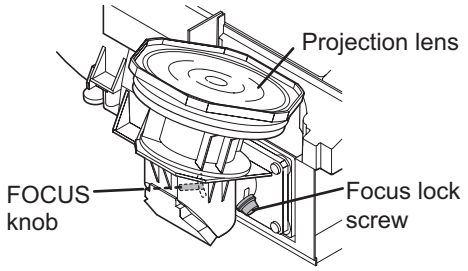
4.5.5 MAIN CPU SYSTEM SETTING (Fixed values)

Item No.	Item	Variable range	Setting value
Z001	(Not display)	00 - 0F	00
Z002	(Not display)	00 - 0F	00
Z003	(Not display)	00 - 0F	00
Z004	(Not display)	00 - FF	00
Z005	(Not display)	00 - FF	00
Z006	(Not display)	00 - FF	00
Z007	(Not display)	00 - FF	00
Z008	(Not display)	00 - FF	00
Z009	(Not display)	00 - FF	00
Z010	(Not display)	00 - FF	00

4.6 ADJUSTMENT PROCEDURE

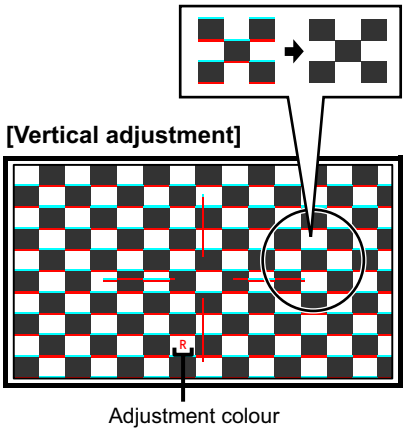
4.6.1 FOCUS

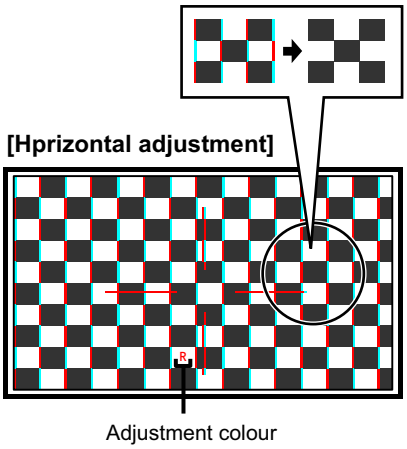
Item	Measuring instrument	Test point	Adjustment part	Description
LENS FOCUS	Hexagon wrench (2.5mm)		FOCUS knob [PROJECTION LENS]	(1) Remove the SPEAKER GRILL and CENTRE PANEL. (2) Display the MENU screen. (3) Loosen the focus lock screw. (4) Adjust the **FOCUS knob** so that the centre screen may become the best focus. (5) Fix the focus lock screw by using the Hexagon wrench. • On this occasion, hold the FOCUS knob with your left hand. (6) Confirm the whole focus of the best screen. (7) Install the CENTRE PANEL and SPEAKER GRILL.

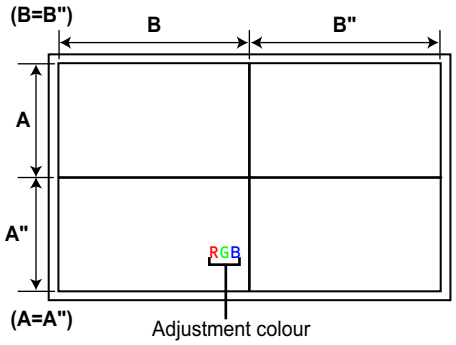


4.6.2 DRIVE CIRCUIT

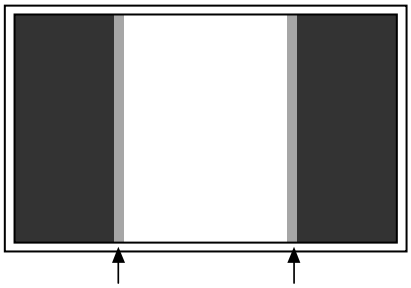
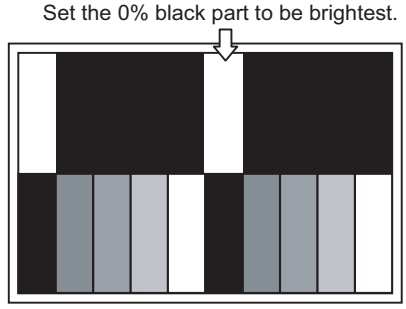
Item	Measuring instrument	Test point	Adjustment part	Description
DRIVE CONVERGENCE	Remote control unit		[9.RGB BOX PATTERN]	(1) Press the **[INFORMATION]** key and **[MUTING]** key simultaneously, to enter the SERVICE MODE. (2) Press the **[9]** key, to select "**RGB BOX PATTERN MODE**" from the SERVICE MODE. (3) Set the adjustment colour mode to "R" to set the red colour adjustment mode. (4) Adjust to minimize the vertical colour drift of RGB box pattern. (5) Adjust to minimize the horizontal colour drift of RGB box pattern. (6) Set the adjustment colour mode to "B" to set the blue colour adjustment mode. (7) Repeat the step 4. to 5. as above. **NOTE:** • Green is fixed. (It can not be removed.) • With this adjustment mode, the changed data is written in the MEMORY instantly.

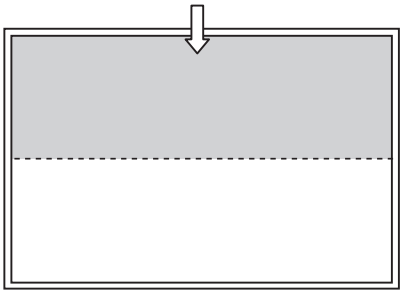
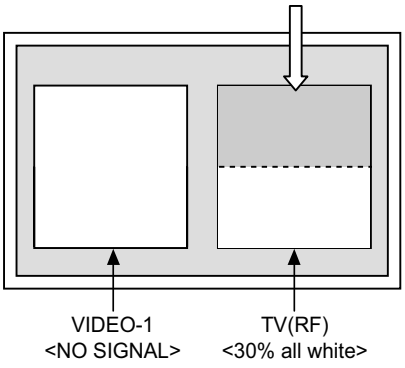




Item	Measuring instrument	Test point	Adjustment part	Description
DRIVE CENTRE POSITION	Remote control unit Signal generator		[9.RGB BOX PATTERN]	(1) Receive a centre cross (or crosshatch) pattern. (2) Press the **[INFORMATION]** key and **[MUTING]** key simultaneously, to enter the SERVICE MODE. (3) Press the **[9]** key, to select "**RGB BOX PATTERN MODE**" from the SERVICE MODE. (4) Set the adjustment colour mode to "RGB" to set the display position adjustment mode. (5) Adjust the top and the bottom width to make **A** and **A"** even. (6) Adjust the left and the right width to make **B** and **B"** even. **NOTE:** • With this adjustment mode, the changed data is written in the MEMORY instantly.
				

4.6.3 VIDEO CIRCUIT

Item	Measuring instrument	Test point	Adjustment part	Description
625i **A-D OFFSET**	Remote control unit Signal generator		[1.ADJUST] S001: PREPARE (Adjustment setting mode change) S008: 5i CB OF(625i Cb offset) S009: 5i CR OF(625i Cr offset) S030: R DRIVE(Red drive) S031: G DRIVE(Green drive) S032: B DRIVE(Blue drive)	(1) Receive a 625i component ramp pattern signal. (2) Set PICTURE MODE to "**STANDARD**". (3) Set ZOOM to "**FULL**". (4) Set COLOUR TEMP. to "**NORMAL**". (5) Select "**1.ADJUST**" from the SERVICE MODE. (6) Set **< S030 >** (R DRIVE), **< S031 >** (G DRIVE) and **< S032 >** (B DRIVE) to "**128**". (7) Set **< S001 >** (adjustment setting mode change) to "**8**" and it changes to the 625i A-D offset adjustment setting mode. (8) Adjust **< S008 >** (625i Cb offset) and **< S009 >** (625i Cr offset) to lose the gap (red line, green line and blue line) which appears at both ends of a white part at the centre of the screen. (9) Set **< S001 >** to "**0**" and it changes to the normal mode. (10) Press the **[MUTING]** key to memoirze the set value.
				
1125i (50Hz) **BRIGHTNESS**	Remote control unit Signal generator		[1.ADJUST] S001: PREPARE (Adjustment setting mode change) S012: HD BL(1125i brightness) S030: R DRIVE(Red drive) S031: G DRIVE(Green drive) S032: B DRIVE(Blue drive)	(1) Receive a 1125i (50Hz) gray scale pattern signal. (2) Set PICTURE MODE to "**STANDARD**". (3) Set ZOOM to "**FULL**". (4) Set COLOUR TEMP. to "**NORMAL**". (5) Select "**1.ADJUST**" from the SERVICE MODE. (6) Set **< S030 >** (R DRIVE), **< S031 >** (G DRIVE) and **< S032 >** (B DRIVE) to "**128**". (7) Set **< S001 >** (adjustment setting mode change) to "**12**" and it changes to the 1125i black level adjustment setting mode. (8) Adjust **< S012 >** (1125i brightness) to set the 0% black part in the upper half of the screen to be brightest. (9) Set **< S001 >** to "**0**" and it changes to the normal mode. (10) Press the **[MUTING]** key to memoirze the set value.
				

Item	Measuring instrument	Test point	Adjustment part	Description
1125i (50Hz) A-D OFFSET Minimize the red and blue noises in the upper half of the screen. 	Remote control unit Signal generator		[1.ADJUST] S001: PREPARE (Adjustment setting mode change) S013: HD CB OF(1125i Cb offset) S014: HD CR OF(1125i Cr offset) S030: R DRIVE(Red drive) S031: G DRIVE(Green drive) S032: B DRIVE(Blue drive)	(1) Receive a 1125i (50Hz) 30% all white pattern signal. (2) Set PICTURE MODE to "**STANDARD**". (3) Set ZOOM to "**FULL**". (4) Set COLOUR TEMP. to "**NORMAL**". (5) Select "**1.ADJUST**" from the SERVICE MODE. (6) Set **< S030 >** (R DRIVE), **< S031 >** (G DRIVE) and **< S032 >** (B DRIVE) to "**128**". (7) Set **< S001 >** (adjustment setting mode change) to "**13**" and it changes to the 1125i A-D offset adjustment setting mode. (8) Adjust **< S013 >** (1125i Cb offset) to minimize the blue noise in the upper half of the screen. (9) Adjust **< S014 >** (1125i Cr offset) to minimize the red noise in the upper half of the screen. (10) Set **< S001 >** to "**0**" and it changes to the normal mode. (11) Press the **[MUTING]** key to memoirze the set value.
SUB SCREEN A-D OFFSET Minimize the red and blue noises in the upper half of the screen.  	Remote control unit Signal generator		[1.ADJUST] S001: PREPARE (Adjustment setting mode change) S016: RT CB OF (Sub screen Cb offset) S017: RT CR OF (Sub screen Cr offset) S030: R DRIVE(Red drive) S031: G DRIVE(Green drive) S032: B DRIVE(Blue drive)	(1) Set PICTURE MODE to "**STANDARD**". (2) Set ZOOM" to "**FULL**". (3) Set COLOUR TEMP. to "**NORMAL**". (4) Set MULTI SCREEN to "**2 pictures**". (5) Receive a PAL 30% all white pattern signal on the Right screen. At the same time, set the Left screen in VIDEO-1 mode (No signal). (6) Select "**1.ADJUST**" from the SERVICE MODE. (7) Set **< S030 >** (R DRIVE), **< S031 >** (G DRIVE) and **< S032 >** (B DRIVE) to "**128**". (8) Set **< S001 >** (adjustment setting mode change) to "**16**" and it changes to the sub screen A-D offset adjustment setting mode. (9) Adjust **< S016 >** (Sub screen Cb offset) to minimize the blue noise in the upper half of the screen. **If you select an adjustment item < S016 >, then the screen automatically turn to twin pictures mode.** (10) Adjust **< S017 >** (Sub screen Cr offset) to minimize the red noise in the upper half of the screen. (11) Readjust **< S016 >** and **< S017 >** to set the upper half of the screen to be the blackest. (12) Set **< S001 >** to "**0**" and it changes to the normal mode. (13) Press the **[MUTING]** key to memoirze the set value.

Item	Measuring instrument	Test point	Adjustment part	Description
WHITE BALANCE (HIGHLIGHT)	Remote control unit Signal generator		[1.ADJUST] S030: R DRIVE (Red drive) S031: G DRIVE (Green drive) S032: B DRIVE (Blue drive)	(1) Receive a PAL 75% all white signal. (2) Set PICTURE MODE to "**STANDARD**". (3) Set ZOOM to "**FULL**". (4) Set COLOUR TEMP. to "**NORMAL**". (5) Select "**1.ADJUST**" from the SERVICE MODE. (6) Adjust to keep one of **< S030 >** (Red drive), **< S031 >** (Green drive) or **< S032 >** (Blue drive) unchanged, then lower the other two so that the all white screen is equally white throughout. **NOTE:** Set one or more of **< S030 >**, **< S031 >**, and **< S032 >** to "**128**". (7) Check that white balance is properly tracked from low light to high light. If the white balance tracking is deviated, adjust to correct it. (8) Press the **[MUTING]** key to memoirze the set value.

SECTION 5
TROUBLESHOOTING

5.1 SELF CHECK FEATURE

5.1.1 OUTLINE

This unit comes with the "Self check" feature, which checks the operational state of the circuit and displays/saves it during failure.Diagnosis is performed when power is turned on, and information input to the main microcomputer is monitored at all time.Diagnosis is displayed in 2 ways via screen display and LED flashes. Failure detection is based on input state of I^2C bus and the various control lines connected to the main microcomputer.

5.1.2 HOW TO ENTER THE SELF CHECK MODE

Before entering the SERVICE MODE, confirm that the setting of **VCR/TV/ DVD** switch is at the "**TV**" side. If the switch has not been properly set, you cannot enter the SERVICE MODE.

(1) Press the **[INFORMATION]** key and **[MUTING]** key simultaneously, to enter the SERVICE MODE.
(2) Press the **[2]** key, to enter the SELF CHECK MODE.
(3) Press the **[ZOOM]** key to enter Page 2 of the SELF CHECK MODE.
*Use the **[3D SOUND]** key to return to Page 1.

NOTE:

When a number key other than the **[2]** key is pressed in the SERVICE MODE screen, the other relevant screen may be displayed.
This is not used in the SELF CHECK MODE. Press the **[MENU]** key to return to the MAIN MENU SCREEN.

5.1.3 HOW TO EXIT THE SELF CHECK MODE

TO SAVE FAILURE HISTORY:

Turn off the power by unplugging the AC power cord plug when in the Self check display mode.

TO CLEAR (RESET) FAILURE HISTORY:

Turn off the power by pressing the [**POWER]** key on the remote control unit when in the Self check display mode.

5.1.4 FAILURE HISTORY

Failure history can be counted up to 9 times for each item. When the number exceeds 9, display will remain as 9. Failure history will be stored in the memory unless it has been deleted.

NOTE:

Only SYNC (with/without sync signals) will be neither counted nor stored.

5.1.5 POINTS TO NOTE WHEN USING THE SELF CHECK FEATURE

In addition to circuit failures (abnormal operation), the following cases may also be iagnosed as "Abnormal" and displayed and counted as "NG".

(1) Temporary defective transmissions across circuits due to pulse interruptions
(2) Misalignment in the on/off timing of power for I^2C bus (VCC) when turning on/off the main power.

Diagnosis may be impeded if a large number of items are displayed as "NG". As such, start Self check check only after 3 seconds in the case of receivers and 5 seconds in the case of panels upon turning on the power. If recurrences are expected, ensure to clear (reset) the failure history and record the new diagnosis reults.

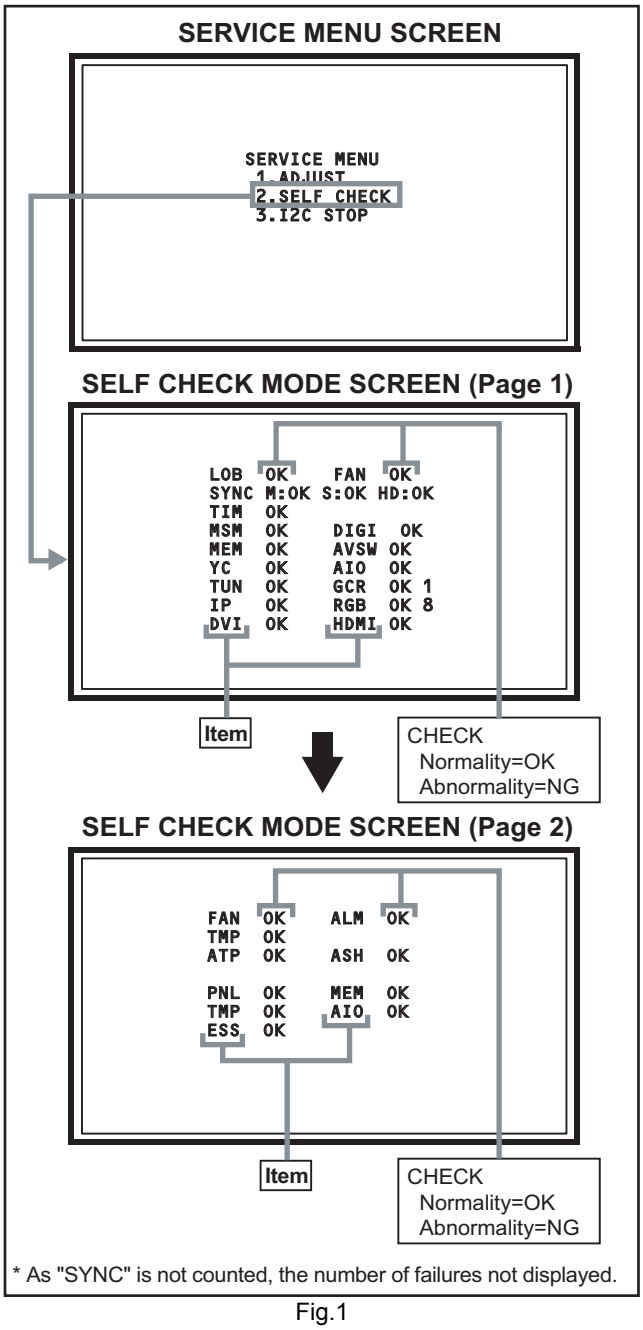


Fig.1

5.1.6 DETAILS

Self check is performed for the following items:

< Page 1 of screen >

Detection item	Display	Detection content	Diagnosis signal (line)	Detection timing
Low bias line short protection	LOB	Confirm the operation of the low bias (2.5V / 3.3V / 5V / 9V) protection circuit. **Q2801, Q2802, Q2803, Q2804 [REGULATOR PWB]**	LB_PRO	Detection starts 3 seconds after the power is turned on. If error continues between 400ms the power is turned off.
Fan lock	FAN	Confirm the operation of the cooling fan. **IC8005 [FAN CONTROL PWB]**	FAN_LOCK	Detection starts 3 seconds after the power is turned on. If error continues between 250ms the power is turned off.
Presence of sync signal	SYNC	Confirmation of presence of video sync signal. M : Main sync signal S : Sub sync signal HD : Component sync signal **IC201 [ANALOG SIGNAL PWB]**	SDA	Confirmation of presence of sync signal in video signal.
AC power input	TIM	Not used.	---	---
Main CPU communication	MSM	Confirmation of ACK (response) signal which uses sync communications with Chassis CPU. **IC7501 [DIGITAL SIGNAL PWB]**	WAKE	If it checks whenever sync communication with SHM performed and no reply of ACK signal an error will be counted.
Digital tuner	DIGI	Not used.	---	---
Main memory	MEM	Confirmation of reply of ACK signal which uses I^2C communication. **IC7602 [DIGITAL SIGNAL PWB]**	SDA	If it checks whenever I^2C communication is performed and no reply of ACK signal an error will be counted.
AV select switch	AVSW	Same as above. **IC301, IC501 [ANALOG SIGNAL PWB]**	SDA	Same as above.
3 dimensions YC separator	YC	Same as above. **IC1001 [DIGITAL SIGNAL PWB]**	SDA	Same as above.
Multi sound process	AIO	Same as above. **IC1101 [RECEIVER PWB]**	SDA	Same as above.
RF tuner	TUN	Same as above. **TU1001 [RECEIVER PWB]**	SDA	Same as above.
Ghost reduction	GCR	Not used.	---	---
DIST process	IP	Confirmation of reply of ACK signal which uses I^2C communication. **IC3001 [DIGITAL SIGNAL PWB]**	SDA	If it checks whenever I^2C communication is performed and no reply of ACK signal an error will be counted.
RGB process	RGB	Same as above. **IC4001 [DIGITAL SIGNAL PWB]**	SDA	Same as above.
DVI (Digital communication)	DVI	Not used.	---	---
Digital input	HDMI	Confirmation of reply of ACK signal which uses I^2C communication.	SDA	If it checks whenever I^2C communication is performed and no reply of ACK signal an error will be counted.

Detection item	Display	Detection content	Diagnosis signal (line)	Detection timing
Fan lock	FAN	Not used.	---	---
Abnormal of operation of PANEL	ALM	Not used.	---	---
Abnormal rise oftemperature in PANEL	TMP	Not used.	---	---
Abnormal rise of temperature in AUDIO PWB	ATP	Not used.	---	---
Short circuit detection of AUDIO PWB	ASH	Not used.	---	---
Panel communication	PNL	Not used.	---	---
Sub memory	MEM	Not used.	---	---
Temp. sensor	TMP	Not used.	---	---
Audio control	AIO	Not used.	---	---
Card viewer	ESS	Not used.	---	---

5.1.7 DISPLAY METHOD WHEN RASTER IS NOT AVAILABLE

In a state where a display screen does not appear due to the failure of this unit, the POWER LED (blue) and LAMP LED (orange) can light up and display a trouble mode.
The factors in case the power is forcibly shut down at the time of failure are memorized and those are displayed.

Check item	Contents	Classifications	LED flash cycle	
			POWER LED	LAMP LED
Lamp does not light up	Detection of lamp return (LAMP_RTN) signals output depending on the status of the lamp supply electric current monitored constantly within the lamp ballast unit. (H = Off) CN311 **[MAIN DRIVE PWB]**	3	0.1 sec interval Simultaneously	
Lamp goes out	Detection of lamp return (LAMP_RTN) signals output depending on the status of the lamp supply electric current monitored constantly within the lamp ballast unit. (H = Off) CN311 **[MAIN DRIVE PWB]**	3	0.1 sec interval Simultaneously	
Lamp cover open	Detection of the interlock switch status for the lamp cover. (H = Abnormal) S0201 **[LAMP COVER SW PWB]**	3	0.1 sec interval Simultaneously	
Abnormal DD CPU circuit	Detection of serial communication error between MAIN DRIVE PWB and RECEIVER PWB. IC3701 **[MAIN DRIVE PWB]**	2	----------	0.5 sec interval
Fan lock (stop)	Detection of LOCK signals outputting the operation (circuit) status of the cooling fan. (H=Abnormal) IC8005 **[FAN CONTROL PWB]**	1	0.5 sec interval Alternately	
Abnormal D-ILA DEVICE temperature	Detection of abnormal inner cabinet temperature. (53°C) IC2001 **[TEMP. SENSOR PWB]**	1	0.5 sec interval Alternately	

EXPLANATION ON ACTION

If NG is detected on an item being diagnosed, turn off the power on this unit. As soon as the power goes off, turn on and off POWER LED and LAMP LED immediately. After the power is shut down, it becomes impossible to turn on the power until the power cable is either plugged in or unplugged from the AC outlet.

- When [1] and [3] take place at the same time, give priority to [1], and [2] will not take place simultaneously with [1] and [3].

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(No.YA385)

Printed in Japan
VPT